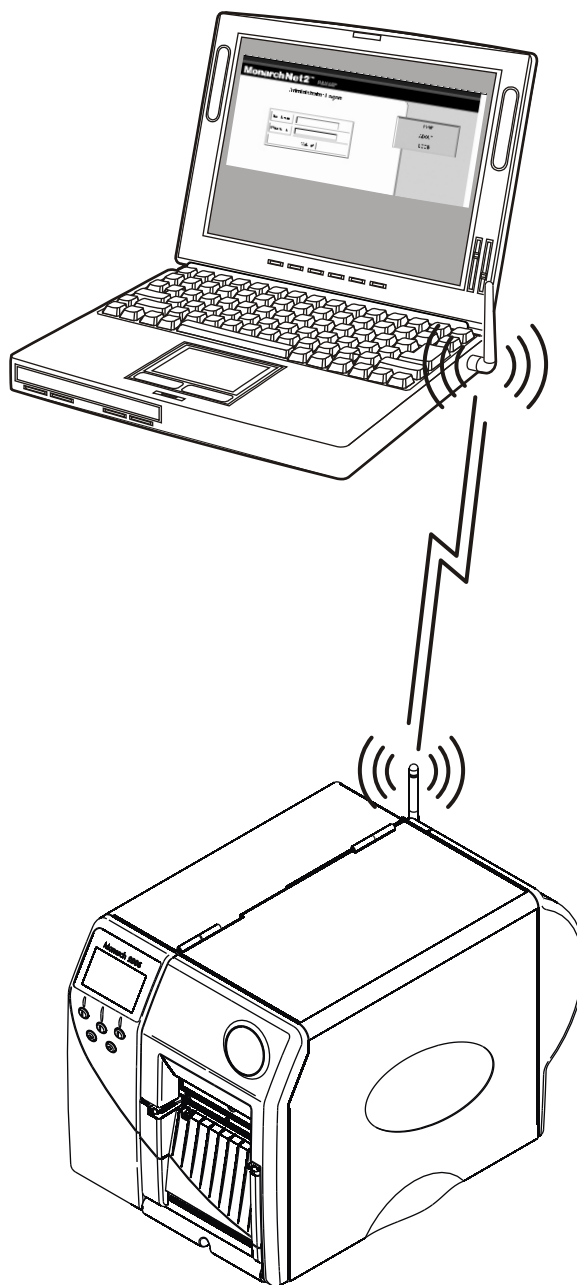


# MonarchNet2™ Operating Instructions

Monarch® 9906  
Printer



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# GETTING STARTED

1

Your Monarch® 9906 printer contains MonarchNet2™ software, which allows you to access, configure, and control your printer with the Monarch® 7411™ Ethernet Print Server remotely across a LAN (local area network), WLAN (wireless local area network), or WWW (world-wide web) connection.

Information in this document supercedes information in previous versions. Check our Web site for the latest release and documentation information.

## Overview

---

The Monarch® 7411™ Print Server lets you communicate with Monarch® printers on an 802.11b and 802.11g wireless network or wired Ethernet 802.3 network. 802.11b/g refers to 802.11b and 802.11g in this manual.

You can use the print server in Ad-Hoc (peer-to-peer) or infrastructure (access point) wireless mode. The print server operates at speeds of up to 54 Mbps on any IEEE 802.11b/g wireless compatible network.

The wireless print server includes a dual-mode built-in wired Ethernet (802.3) connection so the print server automatically switches between wireless and wired Ethernet mode within the same subnet address. When switching between wired and wireless mode on different subnets, turn off the printer and then turn it back on to reinitialize the print server.

Refer to your network manuals for more information. This manual does not include information about setting up your wireless or wired network. **We recommend reviewing the terms in the glossary before you begin.**

## Audience

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This manual is written for the System Administrator who sets up printers on the network and is familiar with basic networking principles.

## Using This Manual

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Following is a summary of the contents of this manual:

	Chapter	Contents
1	Getting Started	Information you should know before using the printer.
2	Configuring the 802.11b/g and IP Settings	Setting communications between your network and printer.
3	Using a Web Browser	Using your Web browser to configure and monitor your network printer.
4	Console Commands	Lists the supported console commands for your network printer.
5	Troubleshooting	Common problems and their solutions.
A	Specifications	Printer and radio specifications.
G	Glossary	Networking and printer terms and their definitions.

## System Requirements

---

To use the print server for printing from a wireless network, you need an 802.11b/g wireless network. The wireless network consists of either of the following:

- ◆ An 802.11b/g wireless enabled computer printing straight to the printer (Ad-Hoc mode).
- ◆ An 802.11b/g wireless access point allowing wireless and wired Ethernet enabled computers to print to the print server (infrastructure mode).

To configure and print, you need to know the following:

- ◆ The MAC address from the label of the print server (for example: 004017023F96).
- ◆ The SSID (service set identifier) for your wireless network.
- ◆ If you are using TCP/IP (recommended for Windows Networks) and are not connected to a DHCP server (for obtaining an IP address automatically), you need a unique IP address for the wireless print server (for example: 192.0.0.192) and a subnet mask. If the print server is not on the same IP subnet as the computers you are printing from, you need a router. A print server with an IP address of 192.0.0.192 will not be seen by a network looking for devices with a prefix of 10.1.xxx.xxx. A router (default gateway) address is optional.
- ◆ Your network's wireless security settings.

## Supported Operating Systems

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The print server supports multiple network protocols for users with Microsoft® Windows®, Novell® NetWare®, NDS, and UNIX®.

## Supported Network Protocols

---

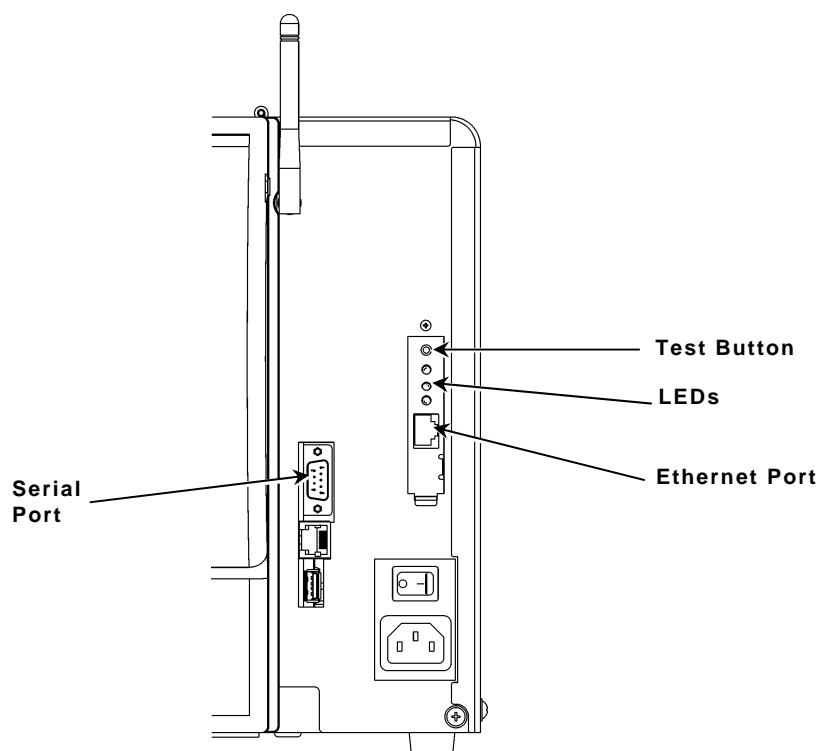
- ◆ TCP/IP:
  - LPD/LPR
  - BOOTP
  - DHCP
  - HP JetDirect™
  - Raw TCP/IP (port 9100 or any chosen port)
  - NetWare (NEST)
  - NetBIOS over IP (with SMB)
  - NetBEUI
  - DLC
- ◆ Telnet
- ◆ RSH or REMSH (remote shell)
- ◆ WINS
- ◆ DHCP
- ◆ FTP
- ◆ SNMP

All protocols are simultaneously active.

## Checking the Print Server Hardware

---

The Ethernet print server comes preinstalled and tested in your printer.



**Note:** Allow a two-second delay when switching from one port (serial, Ethernet, or USB) to another.

## Verifying Successful Installation

---

When the printer is turned on, the print server runs through a set of power-up diagnostics for a few seconds. All three LEDs blink momentarily. Then, the LEDs indicate the following activity:

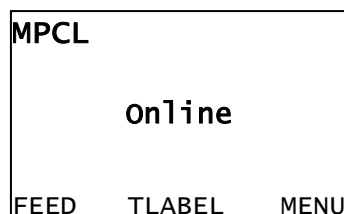
LED Indicators		Status
Orange	solid	printer is on
	blinking	error
	off	printer is off
Yellow	solid	Ethernet link (wired 10baseT)
	blinking	network activity
	off	no Ethernet connection
Green	solid	Ethernet link (wired 100baseTX)
	blinking	network activity
	off	no Ethernet connection
Yellow & Green	solid	wireless link
	blinking	network activity
	off	no wireless connection

Test Button	<p>Press this button down for less than five seconds to print a configuration label on the printer.</p> <p>The label shows the current wireless and network settings of the print server. See <a href="#">“Printing a Configuration Label”</a> for more information. If the label does not print, see Chapter 5, <a href="#">“Troubleshooting.”</a></p> <p>Press this button down for 10 seconds to reset the password to “access.” To reset the print server to its factory default parameters, see <a href="#">“Default Network”</a> for more information.</p>
LED Status Indicators	<p>The orange light comes on when the printer is turned on. The yellow light comes on solid when an Ethernet link (wired 10baseT) is established. The green light comes on solid when an Ethernet link (wired 100baseTX) is established. Both the yellow and green lights come on solid when a wireless link is established. The lights blink during network activity.</p>
Antenna	<p>A rugged 802.11b/g compatible antenna, mounted on the back of plastic-cover printers or on the top of metal-cover printers.</p>

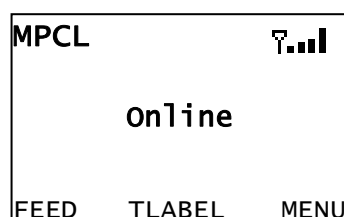
## About the Printer’s Display

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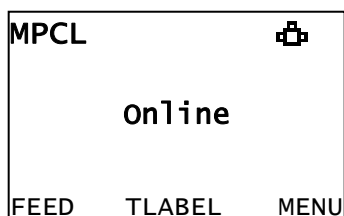
When you turn on your printer, you may see several different “Online” screens based on your printer’s current configuration.



The printer is ready to accept data, but it does not have a print server with a MonarchNet2 connection.



A **wireless** connection is established between the Ethernet print server and the MonarchNet2 protocol.



A **wired** connection is established between the Ethernet print server and the MonarchNet2 protocol.

**Note:** It may take a minute or more before a connection is established with the Ethernet print server and the network. The connection icon blinks while a connection is being established.

The boxes on the display indicate the signal strength of the connection between the printer and access point. This is an approximation and should be used for reference. For example, these boxes ■■ indicate of signal strength of approximately 30 percent.



## Printing a Configuration Label

---

To print a configuration label, press the Test button on the back of the print server.

Use 6-inch long supply. If you are using supply that is shorter than six inches long, temporarily change your Supply Type in the printer menu to “continuous” to print the entire test label. After printing the test label, change your supply type to your previous setting. Some information may print outside the label edges of narrow supply.

MonarchNet 2 Network Status	
-----	
Wireless	Connected
00-33-22-AK-35-18	MAC
CZMO -7.01L	Nwk Ver -
(2006.05.23)	
7.3	Boot Ver
Ver 5.1	WiFi Ver
1.0	Prn Ver
192.0.0.192	IP Address
255.255.0.0	Subnet Mask
192.0.0.192	IP Gateway
(via DHCP 192.0.10.192)	
AUTO	Boot Method
3	Boot Tries
0 min	Timeout
1 min	Keep Alive
ABC123	WiFi SSID
INFRASTRUCTURE	WiFi Mode
11	WiFi Speed
Disabled	WiFi WEP
72	Signal Strength
	Actual SSID
	Attached AP MAC
2485	Packets Received
225990	Bytes Received
448	Bad Packets Received
0	Receiver Overruns
193	Packets Transmitted
23731	Bytes Transmitted

At the printer, you can also print a network/wireless test label (third test label), which lists the IP address, subnet mask, etc. See Chapter 5, “[Troubleshooting](#),” for more information.

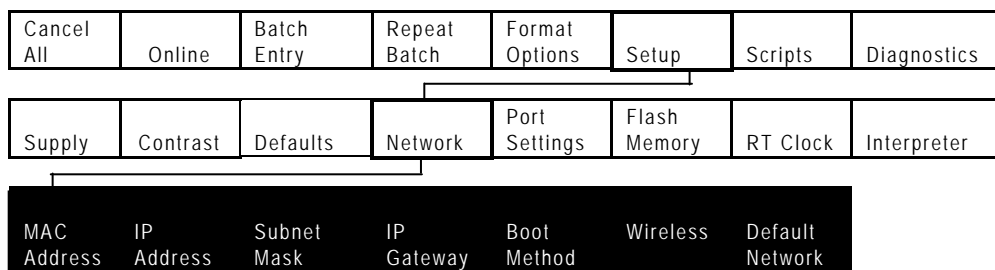


# CONFIGURING THE 802.11b/g AND IP SETTINGS

This chapter explains how to configure and view your network settings by using the printer's Main Menu. You can set the MAC address, IP address, subnet mask, IP gateway, boot method, wireless information, and default network. *If the printer is not communicating with the print server's network card, the Network Menu options do not appear.*

**All nodes of a wireless network need to have the same settings to communicate with each other. We recommend reviewing the terms in the glossary before you begin.**

## Main Menu



The options are listed in the table below.

Option	Choices	Default
MAC Address	View only	None – preset value
IP Address	xxx.xxx.xxx.xxx	192.0.192.0
Subnet Mask	xxx.xxx.xxx.xxx	0.0.0.0
IP Gateway	xxx.xxx.xxx.xxx	0.0.0.0
Boot Method	Auto/Static/BOOTP/DHCP/RARP	Auto
Wireless	See <a href="#">“Wireless”</a> section	N/A
Default Network	Default Setting/Factory Default	N/A

## Saving Settings

After you display the option you need, press **Enter** to save the setting. Press **Escape** to exit to the next higher menu. If you save any network or wireless options, the print server resets and uses the new settings. It may take a minute or more, depending on network traffic, for the print server to reset and connect to the network. **“Please wait...”** is displayed while the print server resets and is connecting to the network.

**Note:** Whenever you press **Escape**, you lose all previous entries you have made since the last time you pressed **Enter**.

Make sure to inform your System Administrator if you change any settings. *Keep a record of each of your network printer's settings in a safe place.*

## Viewing the MAC Address

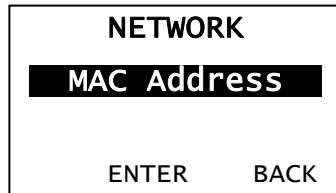
---

The Media Access Control (MAC) Address is a hard-coded value that cannot be changed (like a serial number). It consists of four 3-digit numeric fields, usually separated by periods. The MAC address of the print server is located on the label of the print server.

**Note:** If the printer is not communicating with the print server's network card, the Network Menu options do not appear.

To view the setting, from the Main Menu, select Setup, then Network. Then, follow these steps.

1. Press **←** or **→** until you see MAC Address.



2. Press **ENTER** to view the MAC Address.



3. Press **BACK** to return to the previous menu or until you return to the Home/Online screen.

## Entering the IP Address

---

The IP (Internet Protocol) Address is a unique identifier for a device on a network. It consists of four 3-digit numeric fields, separated by periods.

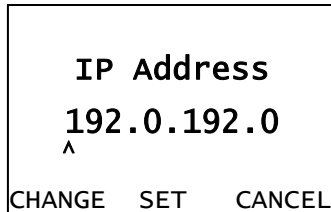
**Note:** If using the optional keyboard, enter the IP Address you need using the numeric keys and press **ENTER**.

To change the setting, from the Main Menu, select Setup, then Network. Then follow these steps.

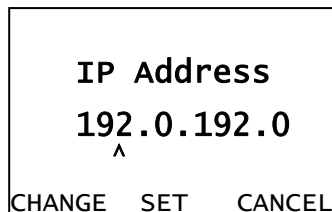
1. Press **←** or **→** until you see IP Address.



2. Press **ENTER** to view the IP Address. The current setting is shown.



3. Press **←** or **→** to scroll through the positions. The selected position is has a ^ below the number.



For example, to change the IP Address from 192 to 000, press **←** or **→** to highlight the first position and press **CHANGE** until you see 0, then press **→** to select the next position and press **CHANGE** until you see 0, then press **→** to select the next position and press **CHANGE** until you see 0. Press **SET** to save the setting or press **CANCEL** to exit without saving.

If you enter a series of digits greater than 255 for any segment of the IP Address and press **SET**, the printer does not save the setting. However, no error appears on the display.

Correct the IP address and then press **SET** to save the setting.

4. Press **BACK** until you return to the Home/Online screen.

## Entering the Subnet Mask

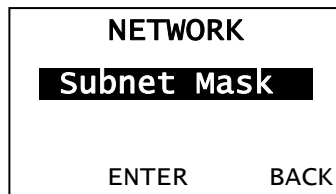
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IP networks are divided using subnet masks. The subnet mask address determines where the IP address belongs in the network. It consists of four 3-digit numeric fields.

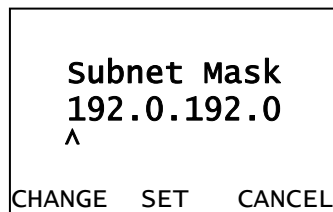
**Note:** If using the optional keyboard, enter the Subnet Mask you need using the numeric keys and press **Enter**.

To change the setting, from the Main Menu, select Setup, then Network. Then follow these steps.

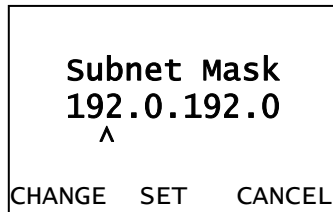
1. Press **←** or **→** until you see Subnet Mask.



2. Press **ENTER** to view the Subnet Mask. The current setting is shown.



3. Press **←** or **→** to scroll through the positions.



For example, to change the Subnet Mask from 192 to 000, press **←** or **→** to highlight the first position and press **CHANGE** until you see 0, then press **→** to select the next position and press **CHANGE** until you see 0, then press **→** to select the next position and press **CHANGE** until you see 0. Press **SET** to save the setting or press **CANCEL** to exit without saving.

If you enter a series of digits greater than 255 for any segment of the Subnet Mask and press **ENTER**, the printer does not save the setting. However, no error appears on the display.

Correct the IP address and then press **ENTER** to save the setting.

4. Press **BACK** until you return to the Home/Online screen.

## Entering the IP Gateway

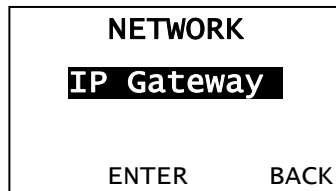
---

The IP Gateway (or router) allows connections (communications) between different subnets on a network. It consists of four 3-digit numeric fields.

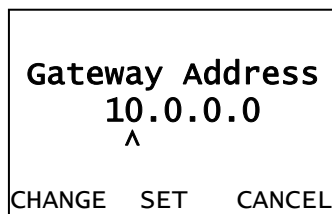
**Note:** If using the optional keyboard, enter the IP Gateway you need using the numeric keys and press **ENTER**.

To change the setting, from the Main Menu, select Setup, then Network. Then follow these steps.

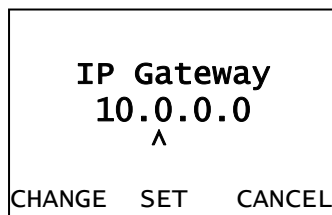
1. Press **←** or **→** until you see IP Gateway.



2. Press **ENTER** to view the Gateway Address. The current setting is shown.



3. Press **←** or **→** to scroll through the positions.



For example, to change the Subnet Mask from 192 to 000, press **←** or **→** to highlight the first position and press **CHANGE** until you see 0, then press **→** to select the next position and press **CHANGE** until you see 0, then press **→** to select the next position and press **CHANGE** until you see 0. Press **SET** to save the setting or press **CANCEL** to exit without saving.

If you enter a series of digits greater than 255 for any segment of the IP Gateway and press **ENTER**, the printer does not save the setting. However, no error appears on the display. Correct the IP address and then press **ENTER** to save the setting.

4. Press **BACK** until you return to the Home/Online screen.

## Setting the Boot Method

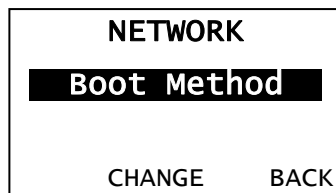
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The boot method sets the way the device receives its IP address. The choices include Auto, Static, BOOTP, DHCP, and RARP.

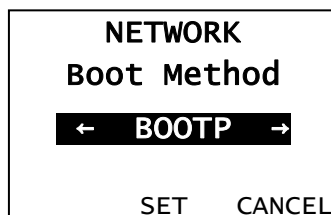
- Auto**     Tries DHCP, BOOTP, and RARP, then sets to Static if the IP address is not automatically set using any of the previous methods.
- Static**    Use if your network uses fixed configuration. The IP address remains the same every time the device connects to the network.
- BOOTP**    The device broadcasts its hardware address and the MAC address, the BOOTP server responds with the IP address.
- DHCP**     The network automatically assigns an IP address within a specified range to a device when it is first turned on. A device could have a different IP address every time it connects to the network.
- RARP**     The device sends a RARP request and the RARP server responds with an IP address.

To change the setting, from the Main Menu, select Setup, then Network. Then follow these steps.

1. Press **←** or **→** until you see Boot Method.



1. Press **CHANGE** to highlight Boot Method. The current setting is shown. Press **←** or **→** to scroll through the options.



2. When you see the Boot Method setting you need, press **SET** to save the change. Press **CANCEL** to leave it unchanged.
3. Press **BACK** until you return to the Home/Online screen.



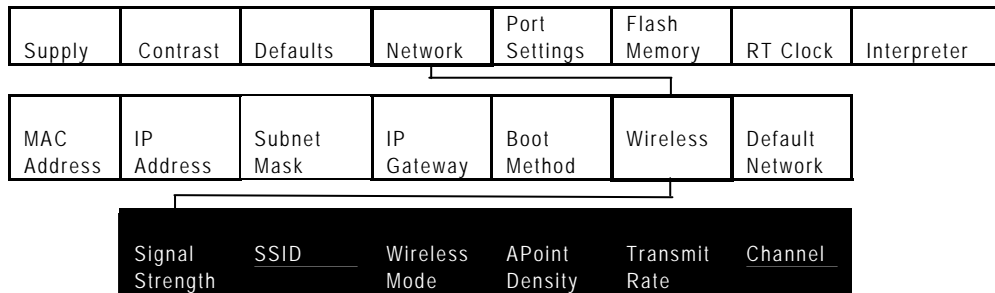
## Wireless

Using the Wireless Menu, you can view the signal strength, set the Service Set Identifier (SSID), wireless mode, A-Point density, transmit rate, and channel.

**Note:** All nodes of a wireless network need to have the same settings to communicate with each other. We recommend reviewing the terms in the glossary before you begin.

If the printer is not communicating with the print server's network card, the Network Menu options do not appear.

### Setup Menu



The options are listed in the table below.

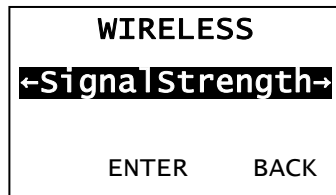
Option	Choices
Signal Strength	0 to 100
SSID	xxxxxxxxxxxxxx
Wireless Mode	Infrastructure or Ad-Hoc
APoint Density	Low/Med/High
Transmit Rate	1/2/5.5/11/12/18/24/36/48/54
Channel	1 to 11

## Viewing the Signal Strength

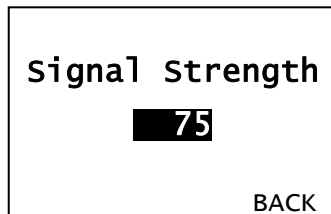
The connection between the device and access point is shown as signal strength, which is a percentage from 0 to 100, where 0 is no connection and 100 is an excellent connection. A percentage below 30 indicates you may be experiencing interference or are close to being out of the access point's range. With a percentage below 50, printing performance could be affected. If the signal strength is low, increase the number of retries. To improve the signal strength, try moving the printer closer to the access point and away from other radio devices such as Bluetooth® wireless devices, microwave ovens, or 2.4-gigahertz cordless phones.

To view the setting, from the Setup Menu, select Network, then Wireless. Then follow these steps.

1. Press **←** or **→** until you see **Signal Strength**.



2. Press **ENTER** to view the Signal Strength. The current setting is shown.



3. Press any button to return to the previous menu.
4. Press **BACK** until you return to the Home/Online screen.

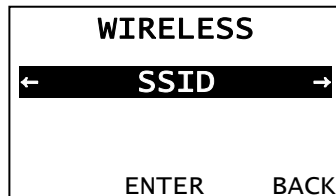
## Entering the SSID

The Service Set Identifier (SSID) is a unique identifier that must match for all nodes on a subnetwork to communicate with each other. It consists of up to 32 characters (any printable character, including spaces). If using the space character, it must be enclosed in quotation marks.

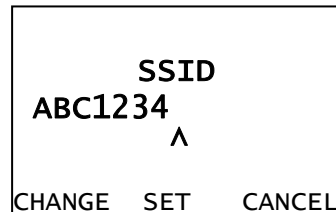
**Note:** The SSID is case-sensitive. If using the optional keyboard, enter the SSID you need using the numeric keys and press **Enter**.

To change the setting, from the Setup Menu, select Network, then Wireless. Then follow these steps.

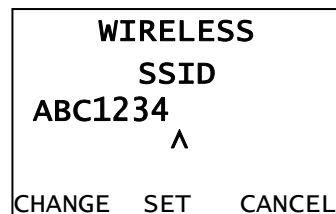
1. Press **←** or **→** until you see SSID.



2. Press **ENTER** to view the SSID. The current setting is shown.



3. Press **CHANGE** to change the SSID.



Press **←** or **→** to scroll through the positions.

For example, to change the SSID from ABC to DOR, press **←** or **→** to highlight the first position and press **CHANGE** until you see D, then press **→** to select the next position and press **CHANGE** until you see O, then press **→** to select the next position and press **CHANGE** until you see R. Press **SET** to save the setting or press **CANCEL** to exit without saving.

Hold **CHANGE** to scroll quickly through the characters from 0-9;A-Z;a-z or press **CHANGE** once to scroll one character at a time.

To clear the SSID, press **←** and **→** at the same time when you are at the end of the SSID field. If you are in the middle of the field and you press **←** and **→** at the same time, any characters to the right of the cursor are cleared.

4. Press **BACK** until you return to the Home/Online screen.

## Wireless Mode

The wireless mode sets how you communicate with your wireless network.

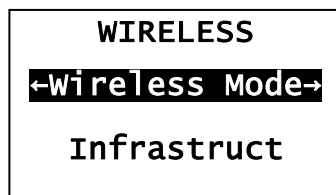
In Ad-Hoc mode, you do not need an access point. Ad-Hoc mode is also called peer-to-peer (point-to-point) communications, so as long as the devices are in range, they will connect and communicate with each other.

Infrastructure mode requires an access point to communicate.

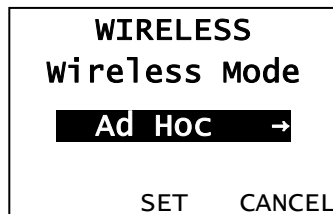
**Note:** If communicating in a mixed environment where both Ad-Hoc and infrastructure mode are used, make sure the SSIDs are unique in both modes.

To change the setting, from the Setup Menu, select Network, then Wireless. Then follow these steps.

1. Press **←** or **→** until you see Wireless Mode.



2. Press **CHANGE** to highlight Wireless Mode. The current setting is shown. Press **←** or **→** to scroll through the options.



3. When you see the Wireless Mode setting you need, press **SET** to save the change. Press **CANCEL** to leave it unchanged.
4. Press **BACK** until you return to the Home/Online screen.

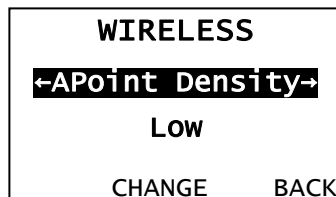
## A-Point Density

The A-Point density is the access point's density. If the communication quality (transmit rate) between devices on a network drops below a certain level, the devices scan for another access point in the area offering better transmit rates, etc. The range is Low, Medium, or High.

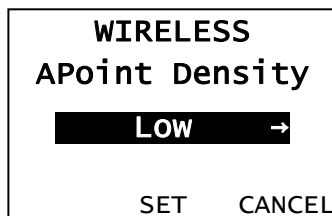
If set to High density, the device searches for another access point in range using 11 Mbps communications; Medium uses 2 to 5.5 Mbps communications; Low uses 1 to 2 Mbps communications.

To change the setting, from the Setup Menu, select Network, then Wireless. Then follow these steps.

1. Press **←** or **→** until you see APoint Density.



2. Press **CHANGE** to highlight APoint Density. The current setting is shown. Press **←** or **→** to scroll through the options.



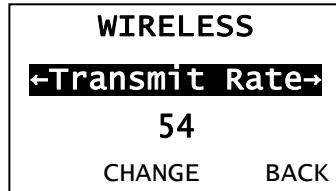
3. When you see the APoint Density setting you need, press **SET** to save the change. Press **CANCEL** to leave it unchanged.
4. Press **BACK** until you return to the Home/Online screen.

## Transmit Rate

The transmit rate sets the maximum speed at which the devices communicate with each other on the network. The speeds are in Mbps (megabits per second). Choices include: 1, 2, 5.5, 11, 12, 18, 24, 36, 48, or 54. The transmit rate is negotiated with the access point and this setting may be ignored.

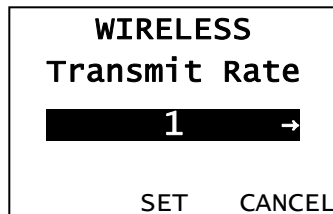
To change the setting, from the Setup Menu, select Network, then Wireless. Then follow these steps.

1. Press **←** or **→** until you see Transmit Rate.



A rectangular screen with a black border. At the top, the word "WIRELESS" is centered in bold. Below it, "←Transmit Rate→" is centered in bold. Underneath that, the number "54" is centered. At the bottom, the words "CHANGE" and "BACK" are positioned on the left and right respectively.

2. Press **CHANGE** to highlight Transmit Rate. The current setting is shown. Press **←** or **→** to scroll through the options.



A rectangular screen with a black border. At the top, the word "WIRELESS" is centered in bold. Below it, "Transmit Rate" is centered in bold. Underneath that, the number "1" is centered, followed by a right-pointing arrow "→". At the bottom, the words "SET" and "CANCEL" are positioned on the left and right respectively.

3. When you see the Transmit Rate you need, press **SET** to save the change. Press **CANCEL** to leave it unchanged.
4. Press **BACK** until you return to the Home/Online screen.

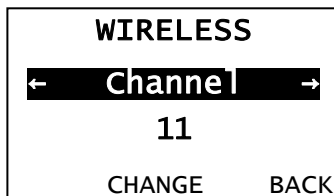
## Channel

This option selects the channel on which your network devices communicate. All devices must be on the same channel to communicate. Other radio devices such as Bluetooth® wireless devices, microwave ovens, or 2.4-gigahertz cordless phones may operate on the same channel as your network. Channels 1-11 are available. Use the channel for Ad-Hoc mode. In infrastructure mode, the channel is negotiated with the access point and this setting is ignored.

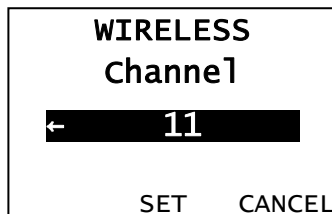
**Note:** Make sure all network devices are set to the same channel.

To change the setting, from the Setup Menu, select Network, then Wireless. Then follow these steps.

1. Press **←** or **→** until you see **Channel**.



2. Press **CHANGE** to highlight Channel. The current setting is shown. Press **←** or **→** to scroll through the options.



3. When you see the Channel setting you need, press **SET** to save the change. Press **CANCEL** to leave it unchanged.
4. Press **BACK** until you return to the Home/Online screen.

**Note:** If you have problems connecting to your network, change the channel to at least three channels lower or higher than any other wireless networks within range.

## Default Network

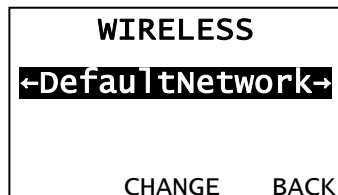
---

The default network option allows you to reset the print server to default settings or factory default settings.

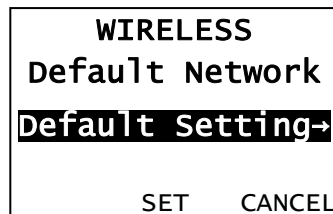
- ♦ If you select default setting, any defaults set using the **SET DEFAULT** Telnet console command are restored.
- ♦ If you select factory default, the print server is reset to factory defaults. See “[Factory Defaults](#)” for the list of default values. When the print server is reset to factory defaults, you must reconfigure all your specific network settings, including IP address, SSID, etc.

To change the setting, from the Setup Menu, select Network, then Wireless. Then follow these steps.

1. Press **←** or **→** until you see Default Network.



2. Press **CHANGE** to highlight Default Network. The current setting is shown. Press **←** or **→** to scroll through the options.



3. When you see the Default Network setting you need, press **SET** to save the change. Press **CANCEL** to leave it unchanged.
4. Press **BACK** until you return to the Home/Online screen.

**Note:** Depending on your printer's boot method, the IP address may be automatically assigned when you turn on the printer. The new IP address may not be the same as the previous one.



## Factory Defaults

If you reset the print server to factory defaults, the following values are restored. **Some settings may stay the same, depending on your network configuration.**

Description	Default
MAC	This value is hard-coded and does not change
TCP/IP	Enabled
Name	PXR_XXXXXX (XXXXXX = the last six digits of the MAC address.)
IP Address	*
Subnet Mask	*
IP Gateway	*
Boot Method	*
Boot Tries	3
Timeout	0 min
Keep Alive	1 min
SSID	<none>
LPD banner	Disabled
LPD retries	Disabled
Port	X1
TCP port	9100
WiFi Mode	Infrastructure
Speed	54
Actual SSID	"discover any AP set for broadcast"
Encryption	Disabled
Authentication Type	Open System
AP density	Low
International Roaming	Flexible
Regulatory Domain	USI (United States, Indoor)

\* May keep previous values based on network configuration.

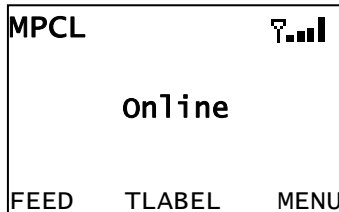


# USING A WEB BROWSER

You can configure and manage the printer and print server using your Web browser: Microsoft® Internet Explorer, version 6.0, or greater; Netscape® Communicator, version 4.7 or greater; or Mozilla Firefox®.

- Notes:**
- ♦ The screen pictures shown in this manual may not exactly match the software.
  - ♦ The recommended screen area resolution for your computer is 1024 x 768 pixels.
  - ♦ Before you begin, you need to know your printer's IP address. The printer should be turned on and ready to receive data.

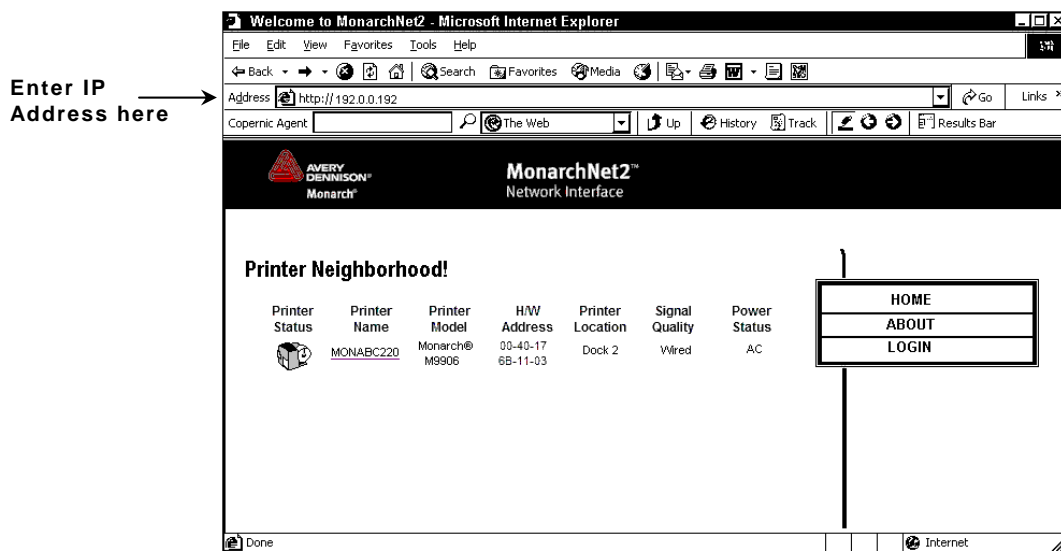
It may take a minute or more, depending on network traffic, for the print server to connect to an access point. When the printer is connected to an access point, you see



The printer is connected and ready to receive data.

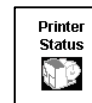
## Logging In

1. Start your Web browser.
2. In the Web address box, type in your printer's IP address and press **ENTER**. For example, 192.0.0.192.



The printer's display shows either the wireless (📶) or wired (🔌) symbol when the printer is connected and ready to receive data.

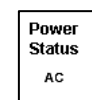
If the printer is experiencing a ribbon or supply problem, this graphic appears with a red background for Printer Status.



If the printer has a wireless connection, this graphic appears for Signal Quality.



If the printer has an AC power connection, this graphic appears for Power Status.



4. Click **LOGIN** or the printer's name (for example: PXR8A983A).

**Administrator Logon**

User Name:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Submit"/>	

[HOME](#)  
[ABOUT](#)  
[LOGIN](#)

5. Type **access** for the password and click **Submit**. You do not need a user name. The password is case-sensitive and saved in the printer's flash memory. See "[Changing the Password](#)" to change the password.

**Admin Home** Printer Name: PXR\_8A97CA  
IP Address: 192.0.0.192

[About](#) [Tech Support](#)

Printer Model: Monarch® M9906  
Printer Name: PXR\_8A97CA  
HW Address: 00-40-17-8A-97-CA  
Serial Number:  
IP Address: 192.0.0.192  
Subnet Mask: 255.255.0.0  
Default Gateway: 192.0.0.192  
Installed/Enabled Options:  
☐ Knife  
☒ USB  
☐ External Keyboard  
☐ Verifier  
☐ Stacker  
☐ RFID

[HOME](#)  
[NETWORK CONFIGURATION](#)  
[PRINTER CONFIGURATION](#)  
[VIRTUAL PANEL DISPLAY](#)  
[CUSTOM COMMAND](#)  
[CUSTOM DATA](#)  
[ACCESS CONTROL](#)  
[FIRMWARE UPDATE](#)  
[LOG OFF](#)

The About tab appears with information about your printer, including printer name, IP address, installed/enabled options, and more. Click the Tech Support tab if you need to contact us.

## Configuring the Printer

You can configure the printer using your Web browser.

1. From the side Menu Bar, click **Printer Configuration**.

Printer Configuration

Printer Name: PXR\_8A97CA  
IP Address: 192.0.0.192

Printer Configuration | System Setup

**Supply Setup**

Ribbon/Energy:

Supply Type:

Feed Mode:

Cut Adjust:

Supply Position:

Batch Separators:

Skip Index:

Backfeed:

Dispense Position:

Backfeed Distance:

**Image Adjustments**

Contrast:

Print Position:

Margin Position:

**Side Menu Bar**

- HOME
- NETWORK CONFIGURATION
- PRINTER CONFIGURATION
- VIRTUAL PANEL DISPLAY
- CUSTOM COMMAND
- CUSTOM DATA
- ACCESS CONTROL
- FIRMWARE UPDATE
- LOG OFF

2. Select one of the following tabs: **Printer Configuration** or **Supply Setup**.

### Changing the Printer Setup

Only configure the settings required for your network/printer.

**Note:** Only the available options for your printer are displayed.

1. On the **Printer Configuration** tab, set the **Ribbon**: None, Ribbon, or High Energy.
2. Set the **Supply Type**: Aperture, Die Cut, Black Mark, or Continuous.
3. Set the **Feed Mode**: Continuous or On Demand.
4. Enter a value for the **Supply Position**. The range is –300 to 300. This adjusts the printer to print at the vertical 0,0 point. Only adjust on initial printer setup.
3. Set the **Batch Separators**: No, Yes, or Long.
4. Set the **Skip Index** mode: No or Yes. Skip index allows you to print an image over multiple labels.
5. Set the **Backfeed**: Off or On. Backfeed advances each printed label to the specified dispense position and then backs up the next label to be printed underneath the printhead.
6. Enter a value for the **Dispense Position** (range is 50 to 200). This adjusts the stopping point of the label *after* it is printed.
7. Enter a value for the **Backfeed Distance** (range is 10 to 200). This is the amount to move the label backwards *before* printing.
8. Enter a value for the **Contrast** (range is –699 to 699). This adjusts the darkness of printing on the supply.

9. Enter a value for the **Print Position** (range is –450 to 450). This adjusts where data prints vertically on the supply.
10. Enter a value for the **Margin Position** (range is –99 to 99). This adjusts where data prints horizontally on the supply.
11. Click **Submit** when finished.

## Changing the System Setup

Only configure the settings required for your network/printer.

The screenshot shows the 'Printer Configuration' web interface. At the top, it displays 'Printer Name: PXR\_8A97CA' and 'IP Address: 192.0.0.192'. The interface has two tabs: 'Printer Configuration' and 'System Setup', with 'System Setup' currently selected. Under 'System Setup', there are two sections: 'Supply Setup' and 'Image Adjustments'. The 'Supply Setup' section includes fields for 'Ribbon/Energy' (set to 'Ribbon'), 'Supply Type' (set to 'Die Cut'), 'Feed Mode' (set to 'Continuous'), 'Cut Adjust' (set to '0'), 'Supply Position' (set to '0'), 'Batch Separators' (set to 'No'), 'Skip Index' (set to 'No'), 'Backfeed' (set to 'Off'), 'Dispense Position' (set to '65'), and 'Backfeed Distance' (set to '65'). The 'Image Adjustments' section includes fields for 'Contrast' (set to '0'), 'Print Position' (set to '0'), and 'Margin Position' (set to '0'). A 'Submit' button is located at the bottom of the 'Image Adjustments' section. On the right side of the interface, there is a vertical menu with links: 'HOME', 'NETWORK CONFIGURATION', 'PRINTER CONFIGURATION', 'VIRTUAL PANEL DISPLAY', 'CUSTOM COMMAND', 'CUSTOM DATA', 'ACCESS CONTROL', 'FIRMWARE UPDATE', and 'LOG OFF'.

1. On the **System Setup** tab, set the **Flash Storage**: Enabled or Disabled. Flash storage allows packets with “R” or “N” selectors to be stored in Flash Memory, instead of volatile RAM. Packets stored in flash memory are saved when the printer is turned off.
2. Set the **Speed Adjustment**: Default, 2.5, 4.0, or 6.0. If you select “Default,” serial bar codes print at 2.5 ips; parallel bar codes print at 6.0 ips.
3. Set the **Power Up Mode**: Online or Offline.
4. Select the **Prompt Set**: English, French, German, Spanish-ES, Japanese, Portuguese, Italian, Swedish, Spanish-MX, Danish, Dutch, Finnish, Norwegian, Polish, Turkish, or Simplified Chinese.
5. Set the **Monetary Sign**: None, USA, UK, Japan, Germany, France, Spain, Italy, Sweden, Finland, Austria, India, Russia, Korea, Thailand, China, Euro-Dollar.
6. Set the **Secondary Sign**: No or Yes.
7. Set the number of **Decimal Places**: 0, 1, 2, or 3.
8. Select **Slashed Zero** to print zeros with a slash (Ø): No or Yes.
9. Click **Submit** when finished.

## Reset/Initialize Network

1. From the side menu bar, click Network Configuration.
2. Select the Protocols tab.

**Network Configuration** Printer Name: PXR\_8A97CA  
IP Address: 192.0.0.192

Protocols **SNMP** Wireless Alerts

**BOOT Settings**  
Boot Method: Auto Boot Tries: 3  
IP Address: 192.0.0.192 MAC: 00-40-17-8A-97-CA  
Subnet Mask: 255.255.0.0 RARP Boot Settings:  
Gateway: 192.0.1.192 ☐ No Subnet ☐ No Gateway

**Domain Name Server Settings**  
☒ Automatic DNS Settings  
Domain Name: yourdomain.com  
Primary DNS Server: 10.0.1.0  
Secondary DNS Server: 10.0.1.2

**Network Time Server Settings**  
☒ Enable Network Time (Tue 01/04/00 08:15:36)  
Time Server IP: 10.0.1.22 Adj [+/- hh:mm]: -5:00

**TCP Settings**  
TCP Window: 10240 TCP Port: 9100  
TCP Timeout: 0 min Keepalive Timer: 1 min  
Enable Receive Checksum: ☒ Probe Idle Connections: Disable

**LPD Settings** **HTTP Server Settings**  
☐ Retry Enable ☒ Enable Web Auth. Timeout  
☐ Enable HP JetAdmin

REFRESH Save Changes Save/Re-init Network

HOME  
NETWORK CONFIGURATION  
PRINTER CONFIGURATION  
VIRTUAL PANEL DISPLAY  
CUSTOM COMMAND  
CUSTOM DATA  
ACCESS CONTROL  
FIRMWARE UPDATE  
LOG OFF

Reset Button

3. Click the **Save/Re-init Network** to reset and initialize the network interface. Any changes made on previous screens **do not** take effect until you click **Reset Network**.

**Resetting Network Please Wait!**

Redirect to homepage in 30 seconds

HOME  
NETWORK CONFIGURATION  
PRINTER CONFIGURATION  
VIRTUAL PANEL DISPLAY  
CUSTOM COMMAND  
CUSTOM DATA  
ACCESS CONTROL  
FIRMWARE UPDATE  
LOG OFF

This process may take a few minutes for the printer to respond with the new settings.

## Configuring the Network Settings

You can configure the print server to operate on your network.

1. From the side Menu Bar, click **Network Configuration**.
2. Select one of the following tabs: Protocols, SNMP, Wireless, or Alerts.



## Changing TCP/IP Settings

Only configure the settings required for your network/printer.

The screenshot shows the 'Network Configuration' web interface. At the top, it displays 'Printer Name: PXR\_8A97CA' and 'IP Address: 192.0.0.192'. Below this is a tabbed interface with 'Protocols', 'SNMP', 'Wireless', and 'Alerts'. The 'Protocols' tab is active, showing several configuration sections: 'BOOT Settings' with fields for 'Boot Method' (set to 'Auto'), 'Boot Tries' (set to '3'), 'IP Address' (192.0.0.192), 'Subnet Mask' (255.255.0.0), 'Gateway' (192.0.1.192), and 'RARP Boot Settings' (with 'No Subnet' and 'No Gateway' options). 'Domain Name Server Settings' includes 'Automatic DNS Settings' (checked), 'Domain Name' (yourdomain.com), 'Primary DNS Server' (10.0.1.0), and 'Secondary DNS Server' (10.0.1.2). 'Network Time Server Settings' has 'Enable Network Time' checked, 'Time Server IP' (10.0.1.22), and 'Adj [+/- hh:mm]' (-5:00). 'TCP Settings' includes 'TCP Window' (10240), 'TCP Port' (8100), 'TCP Timeout' (0 min), 'Keepalive Timer' (1 min), 'Enable Receive Checksum' (checked), and 'Probe Idle Connections' (Disable). 'LPD Settings' has 'Retry Enable' (unchecked) and 'Enable HP JetAdmin' (unchecked). 'HTTP Server Settings' has 'Enable Web Auth. Timeout' (checked). At the bottom are buttons for 'REFRESH', 'Save Changes', and 'Save/Re-init Network'. On the right side of the interface is a vertical menu with links: HOME, NETWORK CONFIGURATION, PRINTER CONFIGURATION, VIRTUAL PANEL DISPLAY, CUSTOM COMMAND, CUSTOM DATA, ACCESS CONTROL, FIRMWARE UPDATE, and LOG OFF.

1. On the **Protocols** tab, set the **Boot Method**: Auto, BOOTP, DHCP, RARP, or Static.
2. Set the number of **Boot Tries**: 1-10. The default is 3. If you are having a problem receiving an IP address with BOOTP, set this number to 10.
3. Change the **IP Address** if necessary.
4. Set or change the **Subnet Mask**.
5. Set or change the **Gateway**.
6. Select either No Subnet or No Gateway for **RARP**.
7. Select **Automatic DNS Settings** to automatically configure the domain name settings.
8. Enter the **Domain Name**.
9. Enter the **Primary DNS Server's** IP address.
10. Enter the **Secondary DNS Server's** IP address.
11. Select **Enable Network Time** to enable the network time protocol, which allows the printer to query a time server on the network and synchronize the clock in the printer.
12. Enter the **Time Server's IP** address. The printer waits 20 seconds for the server to respond. The status is displayed within parentheses: "Waiting for Server," "Time Server Error," or the current date and time.

13. Enter the **Time Zone Adjustment** in hours and minutes, from Greenwich Mean Time (GMT). This offset varies by location and time zone. For example, Eastern/Standard time is five hours behind GMT. Use -5:00 for the offset. For an offset of 3.5 hours, use 3:30.

**Note:** Changes for Daylight Savings Time are not made automatically. If your time zone participates in Daylight Savings Time, change the time zone offset accordingly.

14. Set the **TCP Window**. 10240 is the default.

15. Set the **TCP Port**. Port 9100 is the default.

16. Set the **TCP Timeout** (in minutes). The default is 0, which is no timeout.

17. Set the **Keepalive Timer** (in minutes). The default is 1 minute.

18. Enable or Disable **IP Receive CheckSum** and **Probe Idle Connections**.

19. Select **Retry Enable** for LPD/LPR.

20. Select **Enable Web Authorization Timeout** to make the Web pages time out after five (5) minutes of inactivity.

**Note:** The time out period is set for five minutes and cannot be changed.

21. Select **Enable HP Jet Admin** if using HP Jet Admin. No other settings are required for HP JetAdmin.

22. Click **Save Changes** to save changes or click **Save/Re-init Network** to save the changes and re-initialize the network with the new settings. Any changes made on this screen or other screens do not take effect until you click **Save/Re-init Network**. This process may take a few minutes.

## Changing SNMP Settings

Only configure the settings required for your network/printer.

The screenshot shows a web interface titled "Network Configuration". At the top right, it displays "Printer Name: PXR\_8A97CA" and "IP Address: 192.0.0.192". Below this is a navigation menu with links: HOME, NETWORK CONFIGURATION, PRINTER CONFIGURATION, VIRTUAL PANEL DISPLAY, CUSTOM COMMAND, CUSTOM DATA, ACCESS CONTROL, FIRMWARE UPDATE, and LOG OFF. The main content area has four tabs: Protocols, SNMP (which is selected), Wireless, and Alerts. The SNMP tab contains the following fields: System Name (with "PXR8A97CA" entered), System Contact, System Location, Read Community Name (with "public" entered), Read/Write Community Name (with "public" entered), Trap Community Name (with "public" entered), Trap IP Address (with "0.0.0.0" entered), Trap IP Port (with "0" entered), and an "Enable SNMP Alerts" checkbox which is unchecked. A "Submit" button is at the bottom of the form.

1. Click the **SNMP** tab to change SNMP settings.
2. Enter the **System Name**, if it does not automatically appear.
3. Enter the **System Contact**.
4. Enter the **System Location**.
5. Verify the **Read Community Name** and change if necessary.
6. Verify the **Read/Write Community Name** and change if necessary.
7. Verify the **Trap Community Name** and change if necessary.
8. Enter the **Trap IP Address**, if it does not automatically appear.
9. Enter the **Trap IP Port**, if it does not automatically appear.
10. **Enable SNMP Alerts** if necessary. Set which alerts you need to receive. See "Setting Alerts" for more information.
11. Click **Submit** when you are finished.
12. Click the **Protocols** tab.
13. Click **Save Re-init Network** (on the Protocols tab) before any changes take effect. Even though you submitted your changes on the previous screen, they do not take effect until you click **Save Re-init Network**. This process may take a few minutes.

## Changing Wireless Settings

Only configure the settings required for your network/printer.

**Network Configuration** Printer Name: PXR\_8A97CA  
IP Address: 192.0.0.192

**Protocols** **SNMP** **Wireless** **Alerts**

**Wireless Radio Settings**

Mode: Infrastructure | SSID: |  
Radio: 802.11b-g | Adhoc Channel: 11 |  
Speed: 54 Mbs | International Roaming: Disable |  
Reg. Domain: UNITED STATES | AP Density: Low |

**Wireless Authentication Settings**

Encryption Mode: WPA | Authentication Type: Open |  
Enable WPA Group Key: ☐ | Max. Auth. Attempts: 0 |  
Authentication Protocol: PAP |  
User ID: anonymous | Password: |  
[Configure Authentication Server Certificate](#)

**HOME**  
**NETWORK CONFIGURATION**  
**PRINTER CONFIGURATION**  
**VIRTUAL PANEL DISPLAY**  
**CUSTOM COMMAND**  
**CUSTOM DATA**  
**ACCESS CONTROL**  
**FIRMWARE UPDATE**  
**LOG OFF**

1. Click the **Wireless** tab to configure the wireless network (802.11b/g) settings.
2. Set the **Mode**: Ad-Hoc or infrastructure. In Ad-Hoc mode, you do not need an access point. Infrastructure mode requires an access point to communicate.
3. Set the **SSID**. The SSID is a unique identifier that must match for all nodes on a subnetwork to communicate with each other.
4. Select the **Radio** type: 802.11b or 802.11b/g.
5. Set the **Ad-Hoc channel**: 1 to 11. All devices must be on the same channel to communicate.
6. Set the **Speed**: 1, 2, 5.5, 11, 12, 18, 24, 36, 48, or 54 (megabits per second).
7. Set the **International Roaming**: Disable, Strict, or Flexible.
8. Set the **Regulatory Domain**, which is the country of use.
9. Set the **AP Density**: Low, Medium, or High. If the communication quality (transmit rate) between devices on a network drops below a certain level, the devices scan for another access point in the area offering better transmit rates, etc.
10. Set the **Encryption Mode**: Disable, 64 BIT Encryption, 128 BIT Encryption, WPA, WPA2, WPA2-WPA. WPA2-WPA works as either WPA2 or WPA. The encryption mode determines the algorithm used to encrypt messages.
11. Set the **Authentication Type**: Open, Shared, TLS, TTLS, LEAP, PEAP, EAP-FAST, or PSK. The authentication type specifies how users are identified and verified on a network. These options vary depending on what was selected as the Encryption Mode.  
See "Basic Security Configurations" for more information.
12. **Enable WPA Group Key** to use a group key for data link encryption.
13. Enter the maximum number of **Authentication Attempts**.

14. Enter the **Pre-shared key**, which must be exactly 64 hex characters. If using a passphrase, it must be 8 to 63 displayable characters.
15. Set the **Authentication Protocol**: PAP, or MSCHAP\_V2. See “Basic Security Configurations” for more information.
16. Enter the **User ID**.
17. Enter the **Password**.
18. Click **Submit** when you are finished.
19. Click the **Protocols** tab.
20. Click **Save Re-init Network** (on the Protocols tab) before any changes take effect. Even though you submitted your changes on the previous screen, they do not take effect until you click **Save Re-init Network**. This process takes a few minutes.

### Using WEP

If you select 64 BIT Encryption or 128 BIT Encryption, you need to enter the WEP keys.

**Network Configuration** Printer Name: PXR\_8A97CA  
IP Address: 192.0.0.192

**Protocols** | **SNMP** | **Wireless** | **Alerts**

**Wireless Radio Settings**

Mode: Infrastructure | SSID: |  
Radio: 802.11b-g | Adhoc Channel: 11 |  
Speed: 54 Mbs | International Roaming: Disable |  
Reg. Domain: UNITED STATES | AP Density: Low |

**Wireless Authentication Settings**

Encryption Mode: WPA | Authentication Type: Open |  
Enable WPA Group Key: ☐ | Max. Auth. Attempts: 0 |  
Authentication Protocol: PAP |  
User ID: anonymous | Password: |  
[Configure Authentication Server Certificate](#)

**Wireless Encryption Keys**

Key Selection: 1 |  
Key #1: 0x |  
Key #2: 0x |  
Key #3: 0x |  
Key #4: 0x |  
64 Bit WEP Key: |  
Submit

**HOME**  
**NETWORK CONFIGURATION**  
**PRINTER CONFIGURATION**  
**VIRTUAL PANEL DISPLAY**  
**CUSTOM COMMAND**  
**CUSTOM DATA**  
**ACCESS CONTROL**  
**FIRMWARE UPDATE**  
**LOG OFF**

1. Determine which **Key Selection** to use: 1-4.
2. Set the **WEP Key** values. You must use the same key values for devices to communicate with each other on the network.

**Note:** As you enter the values for the WEP keys, you can see the characters. However, the next time you view this tab, the values are displayed as asterisks (\*).

3. Click **Submit** when finished.
4. Click the **Protocols** tab.
5. Click **Save Re-init Network** (on the **Protocols** tab) before any changes take effect. Even though you submitted your changes on the previous screen, they do not take effect until you click **Save Re-init Network**. This process takes a few minutes.

## Configuring Certificates

For TLS and TTLS authentication, you may need to configure the Authentication Server Certificate.

The screenshot shows a web interface titled "Network Configuration" for a printer named "PXR\_8A97CA" with IP address "192.0.0.192". The interface has four tabs: "Protocols", "SNMP", "Wireless", and "Alerts". The "Wireless" tab is selected. It contains two main sections: "Load Certificate From Local File" and "Certificate Settings".

**Load Certificate From Local File:** Includes a "Certificate File:" label, a text input field, a "Browse..." button, and a "Submit" button.

**Certificate Settings:** Includes labels and input fields for "Certificate Root Key Exponent" (containing "65537"), "Certificate Common Name 1:", "Certificate Common Name 2:", and "Certificate Root Key:". There is a "Submit" button below these fields.

At the bottom of the main content area are "Back" and "Help" links.

On the right side, there is a vertical menu with the following links: HOME, NETWORK CONFIGURATION, PRINTER CONFIGURATION, VIRTUAL PANEL DISPLAY, CUSTOM COMMAND, CUSTOM DATA, ACCESS CONTROL, FIRMWARE UPDATE, and LOG OFF.

1. Select Configure Authentication Server Certificate (on the Wireless tab).
2. Click Browse to search for the appropriate Root Certificate. Click Submit. You see the Root (Public) Key in the Certificate Root Key window. The exponent is almost always 65537 (default). See "Basic Security Configurations" for more information.

The **Certificate Root Key Exponent** value must match the authentication server certificate value.

The **Certificate Root Key** is used to verify the root certificate in the certificate chain provided by the authentication server. Leaving this field blank sets the value to "null."

3. Enter the Certificate Common Name 1, which is the name of the certificate on the primary authentication server.

**Note:** If both common names are left blank, the values are set to "null" and all host certificates are accepted.

4. Click Submit at the bottom of the screen when finished.
5. Click Back to return to the previous screen.
6. Click the Protocols tab.
7. Click Save Re-init Network (on the Protocols tab) before any changes take effect. Even though you submitted your changes on the previous screen, they do not take effect until you click Save Re-init Network. This process takes a few minutes.

## Setting Alerts

The printer contains the minimum set required to be compliant with printer MIB version 2.0 (RFC 3805).

The screenshot shows the 'Alerts' tab in the 'Network Configuration' web interface. At the top, it displays 'Printer Name: PXR 8A97CA' and 'IP Address: 192.0.0.192'. Below this are tabs for 'Protocols', 'SNMP', 'Wireless', and 'Alerts'. The 'Alerts' tab is active, showing a 'Setup Mail Server (SMTP)' section with fields for 'Mail Server IP Address' (10.1.1.1), 'Mail Server Port' (25), and 'Mail Domain Name' (yourcompany.com). There are also fields for 'Alert User 1', 'Alert User 2', and 'Alert User 3'. A checkbox for 'Send all users test message.' is checked. Below this is a table for selecting alerts for each user and for SNMP.

	User 1	User 2	User 3	SNMP
Printer Offline:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Printhead Interlock Error:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Printhead Status Error:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ribbon Failure:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stock Error:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Knife, Stacker, etc., Error:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Verifier Error:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RFID Error:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Print Job Error:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MPCL II Error:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Battery Error:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
System Error:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

At the bottom of the table, there are 'ALL' buttons for each user and for SNMP, and an 'Apply Changes' button.

1. Click the **Alerts** tab to setup the mail server and select users to receive messages about the printer's status.
2. Enter the **Mail Server IP Address**.
3. Enter the **Mail Server Port**.
4. Enter the **Mail Domain Name**.
5. Select the message format: Plain Text or HTML.
6. Specify up to three users who will receive alert messages.
7. Select the alerts for each user. ALL is a toggle switch to select or deselect all the boxes for each user. The "Printer Offline" alert only appears if the operator presses **Escape** on the printer, not **Enter**.
8. Click **Apply Changes** to save your alert settings.
9. Click the **Protocols** tab.
10. Click **Save Re-init Network** (on the **Protocols** tab) before any changes take effect. Even though you submitted your changes on the previous screen, they do not take effect until you click **Save Re-init Network**. This process may take a few minutes.

## Receiving An Alert

You receive an email when the printer goes offline, has a ribbon error, or for any other selected error. The email looks similar to:

Sender ^	Subject ^	Date ^
M9906@averydennison.com	Alert #4: ERROR #754 Check Ribbon.	08/02/2010 10:01
M9906@averydennison.com	Alert #1: Going Off-line	08/02/2010 09:33

The text of the email follows:

MonarchNet2 Printer Alert!!!  
Prn IP:192.0.0.192  
Prn Name:PXR8A97CA  
Going Off-Line

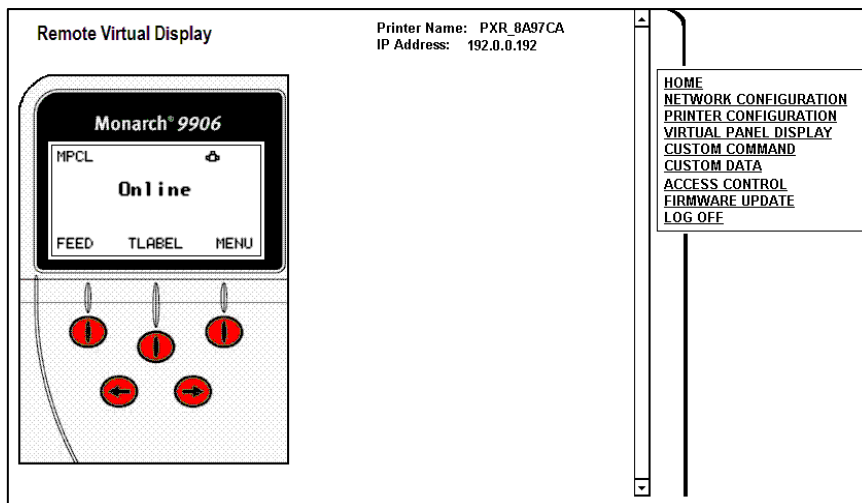
Please DO NOT REPLY to this message.

Perform the appropriate action to correct the problem. Make sure the printer is ready to receive data. The display shows either the wireless (T) or wired (P) symbol after the problem has been corrected.

## Reading the Virtual Panel

The virtual panel operates just like the printer's control panel. You can use the virtual panel to clear errors, feed labels, and more.

1. From the side Menu Bar, click **Virtual Panel Display**.



2. The current status of the printer appears on the virtual panel's display.
3. Click **ESCAPE** to clear an error. Click **FEED** to feed a label.



## Using Custom Command

---

The Custom Commands menu allows you to enter Telnet console commands.

1. From the side Menu Bar, click **Custom Command**.

Enter data for a network console command:

show en

Results:

show en

WiFi Mode = INFRASTRUCTURE  
WiFi SSID:  
Speed = 11  
Regulatory Domain = USA  
WiFi FW Ver = 1F 1.4.9  
AP density = LOW  
Authentication type = OPEN SYSTEM  
Encryption is Disabled

HOME  
NETWORK CONFIGURATION  
PRINTER CONFIGURATION  
VIRTUAL PANEL DISPLAY  
CUSTOM COMMAND  
CUSTOM DATA  
ACCESS CONTROL  
FIRMWARE UPDATE  
LOG OFF

2. Enter any MCPL format and batch data or enter a Telnet console command. See Chapter 4, “Console Commands,” for more information.
3. Click **Submit**. The MPCL format is sent or results from a Telnet console command appear.

## Using Custom Data

---

The Custom Data menu allows you to enter MPCL format and batch data to print a label.

1. From the side Menu Bar, click **Custom Data**.

Enter your data to send to the printer (8 KBytes Max)

{F,3,A,R,E,400,400,"SIMPLE"|  
T,1,60,V,70,30,0,50,20,20,B,L,0,0|}  
{B,3,U,1|  
1,"NET TEST LABEL"|}

HOME  
NETWORK CONFIGURATION  
PRINTER CONFIGURATION  
VIRTUAL PANEL DISPLAY  
CUSTOM COMMAND  
CUSTOM DATA  
ACCESS CONTROL  
FIRMWARE UPDATE  
LOG OFF

2. Enter any MCPL format and batch data.
3. Click **Submit**. The MPCL format is sent and the label prints.

## Changing the Password

---

You can change the access password for MonarchNet2. This should only be done by your System Administrator. The default is **access**.

**The password is case-sensitive** and saved in the printer's flash memory.

**Note:** Make a note of the password if you change it. Changing the password also restricts access to Telnet sessions.

1. From the side Menu Bar, click **Access Control**.

The screenshot shows the 'Access Control' interface. At the top left, it says 'Access Control'. To the right, it displays 'Printer Name: PXR\_8A97CA' and 'IP Address: 192.0.0.192'. Below this, there are three input fields: 'Enter Current Password:', 'Enter New Password:', and 'Retype New Password:'. A 'Submit' button is located below the 'Retype New Password' field. On the right side, there is a vertical menu bar with the following options: HOME, NETWORK CONFIGURATION, PRINTER CONFIGURATION, VIRTUAL PANEL DISPLAY, CUSTOM COMMAND, CUSTOM DATA, ACCESS CONTROL (which is highlighted), FIRMWARE UPDATE, and LOG OFF.

2. Enter the **Current Password**.
3. Enter the **New Password**.
4. Retype the **New Password** to confirm it.
5. Press **Submit** when finished.

The screenshot shows the 'Access Control' interface after a successful password change. The main area displays the message 'PASSWORD SUCCESSFULLY CHANGED'. The menu bar on the right is the same as in the previous screenshot, with 'ACCESS CONTROL' highlighted.

If you change the password and attempt to log in using the old password, this message appears. It also appears for various error conditions when configuring the printer.

The screenshot shows the 'Access Control' interface after an authorization failure. The main area displays the message 'AUTHORIZATION FAILURE YOU MUST LOGIN AGAIN'. Below this message is a 'LOGIN' button. The menu bar on the right is the same as in the previous screenshots, with 'ACCESS CONTROL' highlighted.

6. Click **LOGIN** to login using the correct password and correct the problem.

## Updating Firmware

---

You can update the printer's firmware.

1. From the side Menu Bar, click **Firmware Update**.

**TFTP Firmware Update**

Printer Name: PXR\_8A97CA  
IP Address: 192.0.0.192

**Firmware Update:** Printer Firmware Only

TFTP Server IP Address:

Firmware Path and Filename:

Click To Load Firmware

HOME  
NETWORK CONFIGURATION  
PRINTER CONFIGURATION  
VIRTUAL PANEL DISPLAY  
CUSTOM COMMAND  
CUSTOM DATA  
ACCESS CONTROL  
**FIRMWARE UPDATE**  
LOG OFF

2. Make sure your printer is connected and ready to receive data.
  3. Enter the **TFTP Server IP Address**.
  4. Enter the **Firmware Path and Filename** (relative pathname to your TFTP server). Refer to your TFTP Server's documentation for more information about setting up and using the TFTP server.
- Note:** Depending on your TFTP server, you may only need the filename, not the entire path.
5. Click **Submit** to load the firmware. If you lose power while updating the firmware, call Service.

## Basic Security Configurations

---

There are two main decisions to be made when choosing wireless security: encryption method and authentication protocol.

The encryption method determines the algorithm used to encrypt the message. The authentication type specifies how users are identified and verified on a network.

Select an Encryption Method from the following table:

Encryption Method			
Type	Algorithm	Size (bits)	Description
WEP	RC4	64/128	This is the 64 or 128 bit WEP Key that must match other nodes' encryption keys in order to communicate. The user can only define 10 hex characters (40 bits) for 64 bit WEP or 26 characters (104 bits) for 128 bit WEP.
WPA	RC4	64/128	Improves on WEP by using TKIP* (Temporal Key Integrity Protocol), which dynamically changes the encryption key and MIC (Message Integrity Code), which replaces CRC.
WPA2	AES	128	Improves on WPA by replacing RC4 with AES (Advanced Encryption Standard) for encryption. The user can only define 26 characters (104 bits) for 128 bit WPA2.

\* Dynamic WEP cannot be selected directly, so select 128 for the encryption mode and select an authentication mode from one of the following: LEAP, PEAP, EAP-FAST, TLS, or TTLS.

Select an Authentication Protocol from the following table:

Authentication Protocol					
Type		RADIUS Server Protocol	User ID & Password	Certificate	Private Key Info File
Enterprise	LEAP	PAP or MSCHAPv2	Required	No	N/A
	PEAP*			Optional*	N/A
	TLS				Required*
	TTLS				N/A
	EAP-FAST			PAC*	N/A
Personal	PSK	N/A			

\*PEAP This is only for server-side certificates.

\*Optional Leaving the Certificate Root Key and the Certificate CN (common) names blank, no validation of the host certificate is performed. The values are set to "null" and all host certificates are accepted.

\*Required The Print Server comes with a default Private Key Information File. You can either download that file from the print server and add it to the TLS authentication server, or overwrite a new one on the print server.

\*PAC EAP-FAST does not use certificates to authenticate, but a PAC (Protected Access Credential), which is managed dynamically by the server. The PAC is distributed one at a time to the client manually or automatically.

See the following table of acceptable combinations:

Authentication	Encryption	
	WEP	WPA, WPA (TKIP), WPA2
Open	Static	No
Shared		
PSK	Dynamic	Yes
LEAP		
PEAP		
EAP-FAST		
TLS*		
TTLS		

\* Load the local key before enabling TLS.

Use this chapter to configure the print server using Telnet. You must have a basic understanding of Telnet commands. For initial setup, do not use Telnet, use auto-discover mode. Once you have the IP address, you can use Telnet or a Web browser.

Remote shell support is a common UNIX® application that provides remote command execution capability for networked devices. For more information, refer to your UNIX documentation.

- ◆ You can use Telnet if you do not have access to the MonarchNet2 software.
- ◆ This chapter also includes information about the Network Packet (Console Passthru).

**Note:** The default port is Port 23.

## Conventions

---

This section uses the following conventions:

<b>KEYwords</b>	Type the capitalized letters of each keyword instead of the whole keyword. Some keywords require more capitalized letters than others. For example, <b>SEt</b> <b>KEYVAL</b> <b>RAdio</b>
<b>[options]</b>	Mutually-exclusive options are included within square brackets and separated by a forward slash. Select only ONE of the options. For example, <b>[DISable/STRICT/FLEXible]</b>
<b>&lt;values&gt;</b>	Values are included within brackets. Values that contain spaces (multiple words) must be enclosed within quotation marks (""). For example, <b>SEt EN PW &lt;value&gt;</b> <b>SEt EN PW "Store 876"</b>
<b>n</b>	Numeric digits are indicated by the letter (n). For example, <b>SEt IP BOot n</b> <b>SEt IP BOot 5</b>  <b>SEt EN CHannel nn</b> <b>SEt EN CHannel 11</b>

## Accessing Telnet Console Mode

---

1. Start a Telnet session.
2. Type `telnet 192.0.0.192` (your printer's IP address) and press **Enter**.
3. You see "Welcome to MonarchNet2 Enter Password:"  
Type **access** as the password and press **Enter**. (**access** is the default password.)

The password is case-sensitive. You may not be prompted for a username.

**Note:** The Telnet session times out after 10 minutes of inactivity.

4. To view the current wireless (or network) settings, type `sh en` (show wireless settings) and press **Enter**:

```
WiFi Mode = INFRASTRUCTURE
WiFi SSID: ABC123
Speed = 54
International Roaming: Flexible
Dynamic Frequency Selection: Unsupported
Regulatory Domain = USI
WiFi FW Ver = 2.13.10.0 LMAC, 2.12.18.0 UMAC
AP density = LOW
Authentication type= OPEN SYSTEM
Encryption is Disabled
Local certificate loaded
AP MAC Address = 00 A0 F8 51 B4 FC
Signal Quality = Excellent (100%)
Connected to SSID ENG4121 on channel 11
```

5. To show the current IP settings, type `sh ip` (show TCP/IP settings) and press **Enter**.

```
IP is enabled
IP address    192.0.0.192  Boot tries      3
Subnet mask   255.255.0.0  Boot method    AUTO
IP Gateway    192.1.1.192  Max window     10240
(via DHCP 192.2.2.192)
LPD banner    disabled      Timeout        0 min
LPD retries are disabled Keepalive      1 min
Service Port  TCP port
PXR1E8580_X1 X1 9100
```

6. To change the SSID, type `set en ssid testsystem` and press **Enter**.
7. To set the IP address, type `set ip ad 192.0.0.192` and press **Enter**.
8. To set the subnet mask, type `set ip sub 255.255.0.0` and press **Enter**.
9. Type **INIT** and press **Enter** to save the settings and initialize the unit.
10. Type **EXIT** to exit Telnet.

See the following sections for a list of the most frequently used commands.

## Help Commands

---

For help at any time, type “Help” and a list of available commands appears. The Help command builds on itself, because for each command you type, more details appear for each option.

**Note:** There are help menus for all supported commands. To access a help menu for a specific command, type **HElp <command>**.

**Syntax:** **HElp set**

DEFAULT	Set parameters to factory defaults
EN	Network Parameters
LOAD	Firmware update parameters
PAssword <password>	Set console password
PORT <name>	Parameter for port <name>
PROtect <password>	Set update password
SERVER	Server and LAT parameters
SERVICE <name>	Service Parameters
SNMP	SNMP Variables
Syslog	Syslog Parameters
DNS	DNS Parameters
STRing n "..."	BOT/EOT string
IP	LPD/TCP Parameters
POP3	POP3 Parameters
SMTP	SMTP Parameters
NETWare	Netware Parameters
POWERON <delay-sec>	Power on delay

Displays a list of the available help commands for “Set.”

**Syntax:** **Help set ip**

IP	LPD/TCP Parameters
Address aa.bb.cc.dd	IP node address
ARP [EN/DIS]	IP set via ARP
BAnner [EN/DIS]	LPD banner printing
CHKSUM [EN/DIS]	IP receive checksum
BOot n	Number of DHCP/BOOTP tries
ENable/DISable	Enable or Disable IP Processing
FTIME [EN/DIS]	Fast timeout
FTP [EN/DIS]	FTP protocol
HTTP [EN/DIS]	HTTP protocol
KEEpalive n	Keepalive interval (min)
LPD [EN/DIS]	LPD protocol
METHod <type>	Set method of getting IP address
PIng aa.bb.cc.dd	Test connection to IP host
PRObe [EN/DIS]	TCP connection probes
RANGE [EN/DIS/ALL] aa.bb.cc.dd {MAX ee.ff.gg.hh}	
RARp flags nn	1=no subnet, 2=no router, 3=neither
REtry [EN/DIS]	LPD retry continuation
ROuter aa.bb.cc.dd	Default router address
SUBnet aa.bb.cc.dd	Subnet mask
TCP [EN/DIS]	Raw TCP (9100) protocol
TELnet [EN/DIS]	TELNET protocol
TFTP [EN/DIS]	TFTP protocol
TIMEout n	Inactivity timeout (minutes)
TRAP n [ADDR/PORT/TRIG]	TRAP configuration
Window nn	LPD/TCP maximum window size

Displays a list of the available help commands for “Set IP.”

## General Commands

---

From the list of commands, the brackets - [] indicate to pick one of the options listed, the items inside curly braces - {} are optional and do not need to be specified.

**Note:** For any command that uses SET, you can also use SHOW to view the current setting.

### **CHange/SEt/DEFine**

Changes configuration items.

### **CLear/DElete/PURge**

Removes a specified parameter or configuration item.

### **CLear FAtal**

Deletes fatal error log.

### **CLear PAssword**

Removes the console password.

### **CLear Port <portname> JOB**

Clears current entry in the print server's internal queue for the specified portname (P1 for the first parallel port).

### **CLear PROTECT**

Sets the update password to "null."

### **CLear STRing n**

Removes BOT/EOT string.

### **DEfine**

Defines configuration items.

### **EXIT**

Exits console mode.

### **EXIT/^D**

Exits the print server console.

### **HElp**

Displays the list of available commands.

### **SET**

Sets a specified parameter.

### **SHow**

Displays current settings.

### **INIT**

Saves settings and initializes unit.

### **SAVE**

Saves configuration settings.

### **SET DEFAULT**

Sets print server to factory defaults.

### **SET LOAd [EN/DIS]**

Enables or disables firmware reload after exit.

### **SET LOAd HOsT <name>**

Sets node name of boot host (NetWare firmware load).



**SET LOAd IP aa.bb.cc.dd**

Sets IP address of load host (TCP/IP firmware load).

**SET LOAd SOftware <filename>**

Sets print server's firmware filename to load.

**SET LOAd XModem**

Begins XModem serial download of new firmware.

**SET PAssword**

Sets console password. The user is prompted for old password, new password, and to verify new password. The default password is **access**.

**Note:** The password is case-sensitive.

**SET PROtect <password>**

Sets the update password.

**SET SERVER NAmE <name>**

Sets server node name.

**SHoW DATE or DATE**

Shows the current date in format **Day mm/dd/yy hh:mm:ss**.

**SHoW FATA1**

Shows the fatal error log.

**SHoW FREE**

Shows amount of available memory.

**SHoW LOAd**

Shows the print server's firmware update parameters.

**SHoW SERVER**

Shows the server parameters.

**SHoW SERVER Counters**

Shows the server statistics.

**SHoW SERVER QUeue**

Shows the print server internal queue.

**SHoW SERVICE**

Shows service parameters.

**SHoW TEstpage**

Prints a test page.

**SHoW TIME**

Shows the current time in format **hh:mm:ss**.

**SHoW VErSion**

Shows the server firmware version.

**UNPROTECT**

Allows the user to enter the update password (if one has been defined). Once the update password is entered correctly, SET commands can be used to modify the configuration until the console session is closed with EXIT.

**ZEro**

Zeros statistical counts.

## 802.11b/g Wireless Commands

---

In the following commands, EN and NW (network settings) are interchangeable.

### **CLear EN SSid**

Clears the SSID, so the server connects to any access point.

### **SET EN**

Sets 802.11b/g Wireless Settings.

### **SET EN APDEN [LOW/MED/HI]**

Sets 802.11b/g access point density.

### **SET EN AUTHtype [OPEN/SHARED/TTLS/LEAP/PEAP/WPA-PSK]**

Sets the authentication type. See Chapter 3, "[Using the Web Browser](#)" for more information.

### **SET EN CERTCN <name>**

Sets the EAP common name. If no value is set (null), all host certificates are accepted.

### **SET EN CERTCN2 <name>**

Sets the second EAP common name. If no value is set (null), all host certificates are accepted.

### **SET EN CERTEXP <value>**

Sets the EAP certificate exponent value.

### **SET EN CERTKEY <keyvalue>**

Sets the EAP root key value.

### **SET EN CHannel nn**

Sets 802.11b/g wireless channel.

### **SET EN ENC [Disable/64/128/WPA/WPA2/WPA2-WPA/ Dynamic WEP]**

Sets the encryption mode. See Chapter 3, "[Using the Web Browser](#)" for more information.

### **SET EN ID <userID>**

Sets the authentication user ID. It may include the realm, separated with the "at" ("@" ) character.

### **SET EN INAP [PAP/MSCHAP\_V2]**

Sets the EAP inner authentication protocol.

### **SET EN IROAM [Disable/STRICT/FLEXible]**

Controls whether the radio frequencies are set based on the radio configuration or from its access point. Disabled uses the radio defaults. When in Ad-Hoc mode, you must set the region of operation. See "**SET EN REGDOMain**". Flexible uses access point settings if present, otherwise the radio defaults are used. When in Ad-Hoc mode, you must set the region of operation. See "**SET EN REGDOMain**". Strict uses access point regulatory frequency information. When using an access point, there is no need to set the region of operation.

### **SET EN PW <password>**

Sets the password for 802.11b/g EAP authentication.

### **SET EN KEY# <1/2/3/4>**

Sets which WEP key number to use (default is 1).

### **SET EN KEYVAL <WEPkey>**

Sets WEP key value. Must be hexadecimal.

**SET EN MODE [IN/AD]**

Sets 802.11b/g wireless mode to infrastructure or Ad-Hoc mode.

**SET EN REALM <realm>**

Sets the realm portion of the 802.11b/g EAP authentication ID.

**SET EN REGDOMain <countrycode>**

Sets the region of operation for the print server using the following table. The list of supported countries varies based on the radio type (802.11b or 802.11b/g). When running in Ad-hoc mode or when **IROAM** is **disabled**, you need to set the radio for the region of operation.

Country Code	Description	Country Code	Description
AL	ALBANIA	LV	LATVIA
DZ	ALGERIA	LB	LEBANON
AR	ARGENTINA	LI	LIECHTENSTEIN
AM	ARMENIA	LT	LITHUANIA
AT	AUSTRIA	LU	LUXEMBOURG
AU	AUSTRALIA	MO	MACAO
AZ	AZERBAIJAN	MK	MACEDONIA
BH	BAHRAIN	MY	MALAYSIA
BY	BELARUS	MT	MALTA
BE	BELGIUM	MX	MEXICO
BZ	BELIZE	MC	MONACO
BO	BOLIVIA	MA	MOROCCO
BA	BOSNIA AND HERZEGOVINA	NA	NAMIBIA
BR	BRAZIL	NL	NETHERLANDS
BN	BRUNEI DARUSSALAM	NZ	NEW ZEALAND
BG	BULGARIA	NO	NORWAY
CA	CANADA	OM	OMAN
CL	CHILE	PK	PAKISTAN
CN	CHINA	PS	PALESTINIAN TERRITORY
CO	COLUMBIA	PA	PANAMA
CR	COSTA RICA	PE	PERU
HR	CROATIA	PH	PHILIPPINES
CY	CYPRUS	PL	POLAND
CZ	CZECH REPUBLIC	PT	PORTUGAL
DK	DENMARK	PR	PUERTO RICO
DO	DOMINICAN REPUBLIC	QA	QATAR
EC	ECUADOR	RO	ROMANIA
EG	EGYPT	RU	RUSSIAN FEDERATION
SV	EL SALVADOR	SA	SAUDI ARABIA
EE	ESTONIA	SG	SINGAPORE
FI	FINLAND	SK	SLOVAKIA
FR	FRANCE	SI	SLOVENIA
GE	GEORGIA	ZA	SOUTH AFRICA

Country Code	Description	Country Code	Description
DE	GERMANY	ES	SPAIN
GR	GREECE	LK	SRI LANKA
GT	GUATEMALA	SE	SWEDEN
HN	HONDURAS	CH	SWITZERLAND
HK	HONG KONG	SY	SYRIAN ARAB REPUBLIC
HU	HUNGARY	TW	TAIWAN
IS	ICELAND	TH	THAILAND
IN	INDIA	TT	TRINIDAD AND TOBAGO
ID	INDONESIA	TN	TUNISIA
IR	IRAN, ISLAMIC REPUBLIC OF	TR	TURKEY
IE	IRELAND	UA	UKRAINE
IL	ISRAEL	AE	UNITED ARAB EMIRATES
IT	ITALY	GB	UNITED KINGDOM
JP	JAPAN	US	UNITED STATES
JO	JORDAN	UY	URUGUAY
KZ	KAZAKHSTAN	UZ	UZBEKISTAN
KE	KENYA	VE	VENEZUELA
KP	KOREA, PEOPLE'S REPUBLIC	VN	VIETNAM
KR	KOREA, REPUBLIC	YE	YEMEN
KW	KUWAIT	ZW	ZIMBABWE

**SET EN SPeEd <1/2/5.5/6/9/11/12/18/24/36/48/54>**

Sets 802.11b/g wireless speed in megabits per second (Mbps).

**SET EN SSID "<ssid>"**

Sets 802.11b/g wireless SSID. Use quotes if there is a space in SSID. This is case sensitive.

**SH EN STATS**

Shows the network I/O statistics.

**SET EN WEP [DIS/64/128]**

Sets wired equivalent privacy encryption level to disabled, 64-bit, or 128-bit.

**SET EN WIRED [AUTO/10BASE/100BASE]**

Sets the Ethernet speed.

**SET EN WPAGROUP [ENABLE/DISABLE]**

Selects whether to use the WPA group key mode. When enabled, group keys are used for data link encryption.

**SET EN WPAPSK <WPAkey>**

Sets the WPA pre-shared key or pass-phrase. Use 64 hex characters for the PSK or 8-63 characters for the pass-phrase. This is only valid when authentication mode is WPA-PSK.

## TCP/IP Commands

---

**SET IP [EN/DIS]**

Selects whether to use IP-based protocols.

**SET IP ACcess [EN/DIS/ALL] aa.bb.cc.dd  
[Mask ee.ff.gg.hh]**

Allows or prevents specified IP address from accessing print server.

**SET IP Address**

Sets IP address of print server.

**SET IP ARP [EN/DIS]**

Selects whether to use an IP address with an ARP packet.

**SET IP BANNER [EN/DIS]**

Sets printing of LPD job banners.

**SET IP BOot n**

Sets number of retries (n) for DHCP, BOOTP, RARP

**SET IP CHKSUM [EN/DIS]**

Enables or disables IP receive checksum.

**SET IP FTime [EN/DIS]**

Enables or disables fast timeout.

**SET IP FTP [EN/DIS]**

Selects whether to use the FTP protocol.

**SET IP HTTP [EN/DIS]**

Selects whether to use the HTTP protocol.

**SET IP KEealive n**

Sets keep alive interval (n) in minutes.

**SET IP LPD [EN/DIS]**

Selects whether to use the LPD protocol.

**SET IP MEthod [AUTO/BOOTP/RARP/DHCP/STATIC]**

Sets method of getting IP address.

**SET IP PING aa.bb.cc.dd**

Sends IP ping packets to test the host connection.

**SET IP PRObe [EN/DIS]**

Enables or disables the TCP connection probe.

**SET IP RARp nn**

0 Both

1 no subnet

2 no router

3 neither

Default (0) - IP address is set with subnet mask and router that is the same address as host.

**SET IP RANGE [EN/DIS/ALL]**

Sets the valid range of IP addresses.

**SET IP REtry [EN/DIS]**

Enables or disables LPD retry continuation

**SET IP Router aa.bb.cc.dd**

Sets default Router/Gateway address (or access point).

**SET IP SUBnet aa.bb.cc.dd**

Sets default subnet mask.

**SET SERVICE <servicename> IP [EN/DIS]**

Enables or disables TCP/IP jobs on specified service.

**SET SERVICE <servicename> TCP nn**

Sets TCP port number (>1023 on service).

**SET IP TCP [EN/DIS]**

Selects whether to use the raw TCP (port 9100) protocol.

**SET IP TELNET [EN/DIS]**

Selects whether to use the Telnet protocol.

**SET IP TFTP [EN/DIS]**

Selects whether to use the TFTP protocol.

**SET IP Timeout n**

Sets timeout (n) in minutes.

**SET IP Window nn**

Sets the LPD/TCP maximum window size

## SNMP Commands

---

**CLear SNMP CONTACT <string>**

Removes SNMP SysContact.

**CLear SNMP LOCation <string>**

Removes SNMP SysLocation.

**SET SNMP GETCOMM <string>**

Gets SNMP community.

**SET SNMP SETCOMM1 <string> or SET SNMP SETCOMM2 <string>**

Sets SNMP community 1 or community 2 name.

**Note:** An incoming set request can use either name for comm1 or comm2.

**SET SNMP CONTACT <string>**

Sets SNMP SysContact.

**SET SNMP LOCation <string>**

Sets SNMP SysLocation.

**SET SNMP JETAdmin [EN|DIS]**

Selects whether to use the JetAdmin protocol.

## Using the Network Packet

---

Use the Network Packet to send console commands directly to the network card via the printer's serial port. If the network card does not appear to be communicating with the printer, you can use the Network Packet to change the SSID, IP address, etc. of the network card.

**Note:** You can use Network Packet even if MonarchNet2 is disabled or not installed. Printer console commands are available but network console commands are not.

**Syntax** {N,number,action,device,"name"|  
C,"con\_cmds"|}

- N1. *N* Network Console Packet.
- N2. *number* Number from 0-999 to identify the network console packet.
- N3. *action* Enter **A** to add to packet to the printer.
- N4. *device* Enter **T** to pass the packet through the printer and stores the packet in the network card.
- N5. *"name"* Packet name, 0-8 characters, enclose within quotation marks.
- C1. *C* Command field.
- C2. *"con\_cmds"* Console commands. Must be enclosed within quotation marks. Each command must be on a separate line. The maximum number of characters per command is 100. See the list of commands earlier in this chapter for more information.

**Note:** The maximum number of commands per packet is twenty-five (25).

**Example** {N,1,A,T,"mystore"|  
C, "set ip me static"|  
C, "init" |  
C, "exit" |}

Sends the Network Packet 1 "**my store**" directly to the network card (**T**) and **sets** the **IP** method to **static** for determining IP addresses. Init and Exit commands must be used to save changes and initialize the network card.





This chapter contains information about printing a test label and correcting some problems that may occur.

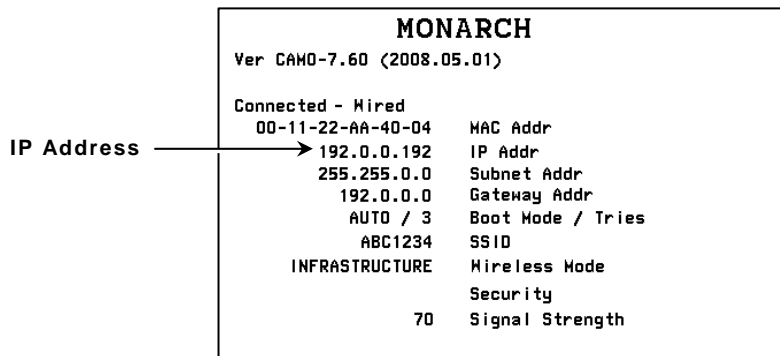
## Printing a Test Label

If you have difficulty communicating with the print server or printer:

1. Verify that the printer is operating properly, is online, and supplies are loaded correctly.
2. If the printer is working properly, test the connection between the printer and the print server by pushing the test button on the back of the printer for less than five seconds. A sample configuration label should print. See Chapter 1, "[Getting Started](#)" for more information.
3. From the Main Menu, select TLabel.
4. Press ← or → to scroll through the test label options.



5. When you see Mnet2 Label, press **PRINT**. Press **BACK** to return to the previous menu without printing a test label



This test label displays the settings for the IP address, subnet address, IP gateway, boot tries, boot method, SSID, wireless mode, WiFi WEP, WiFi signal, and signal strength. See Chapters 2 or 3 to change any of the IP or wireless settings.

Use this table to solve some common printer/network problems.

<b>Problem</b>	<b>Action</b>
Printer does not appear to save IP, subnet, or gateway address.	The value for each segment must be less than 255 in these addresses.
Printer does not communicate with network card or access point.	If you have reset network or wireless settings, allow time for the printer to reset and connect to an access point. This may take a minute or more, depending on network traffic.
The printer does not communicate with your network.	The network settings must match the print server's settings for: <ul style="list-style-type: none"> <li>♦ IP address, gateway, and subnet mask</li> <li>♦ SSID</li> <li>♦ Ad-Hoc or infrastructure mode</li> <li>♦ Security</li> </ul>
Cannot see print server on network.	The devices must be on the same logical network and the subnet masks should be the same.
Configuration/test label shows "searching" or "set manually" for boot method/DHCP.	The message "searching" indicates the print server has not connected to the network yet. The message "set manually" indicates the boot method is Static. If the boot method is not Static, the print server was not able to connect to the network.

Use this table to solve some common MonarchNet2 Web browser problems.

<b>Problem</b>	<b>Action</b>
"Error sending the discovery request" message on your computer/Web browser.	The print server is not communicating on the network. Verify network and print server settings, including IP address, etc.
MonarchNet2 does not appear to be working.	Turn off the printer and turn it back on. Print a configuration label (press the test button on the back of the print server) to confirm the IP address, etc. Enter the correct IP address in your Web browser.
"Authorization Failure" message from MonarchNet2 on your computer/Web browser.	Enter the correct password when logging in to MonarchNet2.

## General Troubleshooting Information

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Use the following information if your print server is not operating properly.

1. Verify that the printer is turned on. If the printer is used on a Monarch® Mobile Work Station (MWS), the MWS unit's power AND the printer must be turned on. The print server does not function when the printer is turned off.
2. If you are switching between wired and wireless mode on different subnets, turn off the printer and then turn it back on to reinitialize the print server.
3. Verify the print server is functioning. When the printer is turned on, the print server runs through a set of power-up diagnostics for a few seconds. All three LEDs blink momentarily. Then, the LEDs indicate the following activity:

LED Indicators		Status
Orange	solid	printer is on
	blinking	error
	off	printer is off
Yellow	solid	Ethernet link (wired 10baseT)
	blinking	network activity
	off	no Ethernet connection
Green	solid	Ethernet link (wired 100baseTX)
	blinking	network activity
	off	no Ethernet connection
Yellow & Green	solid	wireless link
	blinking	network activity
	off	no wireless connection

4. Print a configuration label (see Chapter 1). Press the test button on the print server for about a second and a label prints. Print a test label from the printer. If this does not print, the printer is locked up. Turn off the printer, wait 15 seconds and then turn it back on.
5. On the Mnet2 test label, verify your IP and WiFi settings. The "wired/wireless:" value should be "WIRED" for Ethernet cable and "WIRELESS" for RF. Check the "WiFi SSID" and the "signal strength." Is the SSID correct? Is the signal strength greater than zero? If the signal strength is 0, there is no connection with the access point; 30 (or less) indicates you may be experiencing interference or close to being out of the access point's range, and below 50, printing performance could be affected. If the signal strength is low, increase the number of retries. To improve the signal strength, try moving the printer closer to the access point and away from other radio devices such as Bluetooth® wireless devices, microwave ovens, or 2.4-GHz cordless phones.
6. Telnet to the printer.

**Note:** After the print server has been reset, you may need to re-enable Telnet.

Once you have verified connectivity, Telnet to the printer.

(i.e. `telnet aa.bb.cc.dd`)

You see "Welcome to MonarchNet2 Enter Password:"

Type **access** as the password and press **Enter**.

The password is case-sensitive. You may not be prompted for a user name.

Once here, you have verified operation to the print server.

7. Ping the printer. Pinging the printer tells you if it is "seen" on the network. If you cannot ping the printer, turn the printer off and then on. Then ping every device in the path to the printer – access points, routers, etc. Any device you cannot ping needs attention.

`ping ip address` (i.e. `ping 192.0.0.192`)

8. Verify connection to the data port by starting a Telnet session to the printer using Port 9100 (i.e. `telnet aa.bb.cc.dd 9100`).

Press **Ctrl-E** on your keyboard. This sends an ENQ request. The printer responds with three characters. Depending upon the Telnet being used, you may not see the first character, as it is a hex 05 value. The other two characters are ASCII characters. You see

`A@`

which means the printer is online and waiting. Alternatively, you can type

`{J,2}`

**Note:** The **J** must be capital.

The printer responds with `{J,0,0,"",""}`.

No response means that the printer may have an open session to some other connection. Either terminate the other connection or turn off the printer and turn it back on.

## Troubleshooting Wireless Configuration Problems

---

1. Your computer's wireless adapter and/or access point should be configured to match your print server.
2. The printer should be within range (90 meters or 300 feet) of your computer and away from metal objects and other devices with radio signals (Bluetooth®, 2.4 GHz cordless phones, and microwaves).
3. Use infrastructure mode to connect through an access point.  
Use Ad-Hoc mode to connect without an access point.
4. To use encryption or password protect your wireless network, and your wireless adapter or access point normally uses a password or pass-phrase instead of WEP, it should allow you to enter 0x followed by a ten digit (for 40-bit or 64-bit WEP) or twenty-six digit (for 128-bit WEP) key in hexadecimal format (0-9 or A-F).
5. Change the RF channel (**Ad-Hoc mode only**) to correct intermittent connection problems or slow performance. Change it to at least three channels lower or higher than any other wireless networks within range.

## Technical Support

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If these solutions do not work, call Service at the number listed on the back of this manual.

# SPECIFICATIONS

<b>Link Layer:</b>	802.3 or optional 802.11b/g
<b>Protocols:</b>	TCP/IP Passthru BOOTP DHCP RARP LPD/LPR Telnet RSH or REMSH (remote shell) FTP SNMP NetWare HP Jet Admin

## 802.3 Specifications

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<b>Communication Rate:</b>	10 Mbps or 100 Mbps
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## Optional 802.11b/g Specifications

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<b>Frequency:</b>	2.4 GHz range, direct sequence
<b>Communication Rate:</b>	1, 2, 5.5, 11, 12, 18, 24, 36, 48, or 54 megabits per second
<b>Channels</b>	1 to 11
<b>Mode:</b>	Ad-Hoc or infrastructure
<b>Encryption:</b>	WEP 64 or WEP 128 WPA or WPA2
<b>Authentication:</b>	EAP-FAST LEAP PEAP TLS TTLS PSK

## Options

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Wireless 802.11b/g communications are available. However, check with International Sales for an approved list of countries or regions where these devices can be used.



# GLOSSARY



<b>Absolute Pathname</b>	The full path of a file, including the computer system and any directories or subdirectories. For example, <b>c:\program files\monarch software\mpcl toolbox\9855.phu</b>
<b>Access Point</b>	An interface between a wireless network and a wired network. Access points can be used with Ethernet or other communications to enable roaming throughout a facility.
<b>Ad-Hoc Network/Mode</b>	A wireless network composed of devices that contain a network interface card and no access point. Ad-Hoc mode is also called peer-to-peer (point-to-point) communications or BSS network. As long as the devices are in range and are on the same channel and SSID, they connect and communicate. Use this mode if a wireless infrastructure does not exist or where services are not required.
<b>Authentication Method</b>	This method identifies users on a network, based on a username and password. There are two types: open and shared. Authentication protocols include LEAP, PEAP, TLS, TTLS, EAP-FAST, and PSK.
<b>Auto Method</b>	One of the available boot methods. Auto tries DHCP, BOOTP, and RARP, then sets to the last IP address used if the IP address is not automatically set using any of the previous methods.
<b>BOOTP or Bootstrap Protocol</b>	One of the available boot methods. It is a protocol used by devices that know their MAC address, but do not know their IP address. The device broadcasts its hardware address and the BOOTP server responds with the IP address for it. The network administrator must enter the MAC address in the BOOTP Config file to obtain the IP address from the server.
<b>Boot Method</b>	The wireless print server uses this method to obtain an IP address. This can be set to Auto, DHCP, BOOTP, RARP, or Static.
<b>Boot Tries</b>	The number of times the device tries to get an IP address from the server when using the BOOTP and DHCP methods.
<b>BSS or Basic Service Set BSSID</b>	A set of 802.11b/g devices operating as a fully connected wireless network.  See <i>MAC Address</i> .
<b>Channel or RF Channel</b>	You can select which channel your network devices use to communicate. All devices must be on the same channel to communicate in Ad-Hoc mode. Other radio devices such as Bluetooth® wireless devices, microwave ovens, or 2.4-GHz cordless phones may operate/interfere if they are on the same channel as your network.
<b>DHCP or Dynamic Host Configuration Protocol</b>	One of the available boot methods. It is a protocol that issues IP addresses automatically within a specified range to devices (such as printers) when they are first turned on. The device keeps the IP address for a defined period of time set by your System Administrator; however, a device could have a different IP address every time it connects to the network.
<b>EAP (Extensible Authentication Protocol)</b>	Defines how to pass authentication information between the device and authentication server. The authentication is handled by the EAP type: FAST, TLS, TTLS, etc.
<b>FAST (Flexible Authentication via Secure Tunneling)</b>	Cisco Systems® developed this authentication protocol. It does not use certificates to authenticate, but a PAC (Protected Access Credential), which is managed dynamically by the server. The PAC is distributed one at a time to the client manually or automatically.
<b>Gateway Infrastructure Mode</b>	Allows connections (communications) between different subnets on a network. Requires an access point to communicate with other devices on the network. In infrastructure mode, wireless devices can communicate with each other or with a wired network.
<b>IP Address</b>	An Internet Protocol identifier for a device on a network. It consists of four 3-digit numeric fields, separated by periods. Each number can be zero to 255. An IP address has two components, the network address and the host address. Most company networks have ranges for their IP addresses.

<b>LAN or Local Area Network</b>	A computer network that connects personal computers, workstations, servers, and printers. This allows each user on the network the ability to share devices, such as printers, and communicate with each other via email, etc. LANs can be connected to each other by telephone lines or radio waves. See <i>WLAN</i> .
<b>LEAP (Lightweight Extensible Authentication Protocol)</b>	Cisco Systems® introduced this authentication protocol and provides mutual authentication with unique WEP keys for each user. New keys are issued based on a time limit. Changing the WEP key time limits provides additional security.
<b>LPD/LPR</b>	A printer protocol that uses TCP/IP to establish connections between printers on a network. Also known as Line Printer Daemon/Line Printer Remote.
<b>MAC Address or Media Access Control</b>	A hardware address (6-byte) that uniquely identifies each node of a network. The MAC address is set during manufacturing and does not change. Also, two Network Interface Cards (NIC) <b>will not</b> have the same value.
<b>MSCHAPv2 (Challenge Handshake Authentication Protocol)</b>	MSCHAPv2 is the Microsoft® version of CHAP. It is a three-way handshake protocol that is more secure than PAP. It provides mutual authentication between devices.
<b>NIC or Network Interface Card Node</b>	An adapter (board or card) that can be inserted into a device, so the device can be connected to a network. The NIC converts data from the device into the form transmitted or received from the network A processing location on a network. The location can be a workstation, computer, or printer. Each Node has a unique MAC address.
<b>Open Authentication</b>	This allows any device to authenticate and then attempt to communicate with the access point. Any wireless device can authenticate with the access point, but if WEP is used, the device can communicate only if its WEP keys match the access point's. There is no challenge that occurs, you either have the correct key or not when you communicate with the access point. By eliminating the challenge process, it actually makes this more secure than shared key authentication.
<b>PAP (Password Authentication Protocol)</b>	A simple authentication protocol used with PPP (Point-to-Point Protocol). It is a plain text password system, which is not very secure.
<b>Pathname</b>	The location of a particular file or directory that includes the full path to the needed filename or directory. This is a combination of path and filename.
<b>PEAP (Protected Extensible Authentication Protocol)</b>	Authenticates clients into a network using only server-side certificates, which makes implementing and administering a wireless LAN easier.
<b>Ping</b>	A way to determine if a device is accessible. It sends a packet to the specified address and waits for a reply.
<b>Protocol</b>	This is the way two devices transmit data between each other, including error checking, data compression, and how messages start and end.
<b>PSK (Pre-Shared Key)</b>	Authentication mode of WPA used in SOHO environments. The key value (or pass-phrase) is used for network authentication only (not data encryption). It does not use a RADIUS server like the other modes, but uses a shared key to provide the initial authentication with the access point or host.
<b>RADIUS (Remote Authentication Dial-In Server)</b>	This is an authentication server, such as the Cisco® ACS, Microsoft® IAS, etc.
<b>RARP or Reverse Address Resolution Protocol Relative Pathname</b>	One of the available boot methods. The device sends an RARP request and the RARP server responds with an IP address. The device knows its MAC address and the server responds with the IP address for it. The file or directory location on the user's system relative to the user's current location on the system (what directory the user is currently in). For example, <b>mpcl toolbox\9855.phu</b>
<b>Router</b>	Any device that forwards data along networks. Routers are located at gateways.



<b>Shared Authentication</b>	The access point sends an unencrypted challenge text string to any device attempting to communicate with it. The device requesting authentication encrypts the challenge text and sends it back to the access point. If the challenge text is encrypted correctly, the access point allows the requesting device to authenticate. Both the unencrypted challenge and the encrypted challenge can be monitored; however, this leaves the access point open to attack. Because of this weakness, shared key authentication can be less secure than open authentication.
<b>Signal Strength</b>	A percentage (1 to 100) of the connection between the device and access point. If the signal strength is 0, there is no connection with the access point; 30 or less indicates you may be experiencing interference or close to being out of access point range, and below 50, printing performance could be affected. To improve the signal strength, try moving the printer closer to the access point and away from other radio devices such as Bluetooth® wireless devices, microwave ovens, or 2.4-GHz cordless phones.
<b>Speed or Transmit Rate</b>	Sets the maximum rate of communication between the devices on the network. It is also called transmit rate. The speeds are in megabits per second (Mbps) and include: 1, 2, 5.5, 11, 12, 18, 24, 36, 48, and 54.
<b>SSID or Service Set Identifier</b>	A unique identifier that must match for all nodes on a subnetwork to communicate with each other. It consists of up to 32 characters (any printable character, including spaces). If using the space character, it must be enclosed in quotation marks. It is case-sensitive.
<b>Static Method</b>	One of the available boot methods. Use static if your network uses fixed configuration. The IP address remains the same every time the device connects to the network.
<b>Subnet</b>	A portion of a network that shares a common address component. On TCP/IP networks, subnets are all devices with the same prefix. For example, all devices that start with 192.192.192 are part of the same subnet. Dividing a network into subnets is useful for both security and performance reasons.
<b>Subnet Mask</b>	A mask is used to determine what subnet an IP address belongs to. Companies often have ranges of IP addresses that can be described by one or more masks. For example, a mask of 255.255.255.0 allows variation in the last position only, because the first three positions are fixed.
<b>Telnet</b>	A Terminal Emulation program for TCP/IP networks that runs on your computer and connects your computer to a server on the network. You enter commands through the Telnet program and they run as if you were entering them directly on the server console.
<b>TCP/IP</b>	A way that two devices can transmit data between each other. TCP/IP (Transmission Control Protocol/ Internet Protocol) is generally the standard for transmitting data over a network.
<b>TKIP (Temporal Key Integrity Protocol)</b>	Changes the encryption keys regularly and has time limits before new keys are created. Changing the key periodically provides additional security.
<b>TLS (Transport Layer Security)</b>	A cryptographic protocol that uses client-side and server-side certificates to authenticate users on the Web. It can dynamically create user-based and session-based keys.
<b>TTLS (Tunneled Transport Layer Security)</b>	Provides certificate-based, server-side, mutual authentication of the client and network through an encrypted channel (or tunnel). It can dynamically create user-based and session-based keys.
<b>Transmit Rate</b>	See <i>Speed</i> .
<b>WEP or Wired Equivalent Privacy</b>	<p>A security protocol for wireless local area networks. WEP was designed to provide the same level of security as that of a wired network, which is inherently more secure than a wireless network because wired networks are easily protected against unauthorized access. Wireless networks use radio waves to communicate and can be vulnerable to unauthorized users. WEP provides security by encrypting data over radio waves so that it is protected as it is transmitted. However, it has been found that WEP is not as secure as once believed.</p> <p><b>Note:</b> If one part of a wireless network has WEP enabled, they all must have it enabled with the same key or they cannot communicate.</p>

**128 Bit / 64 Bit  
WEP Key**

This is the 64 or 128 bit WEP key that must match other Nodes' encryption keys in order to communicate: 10 hex characters for 64 bit (40 user-specified characters), or 26 hex characters for 128 bit (104 user-specified characters). You must use the same key values for devices to communicate with each other.

**WLAN or Wireless  
Local Area Network**

A LAN that uses high-frequency radio waves to communicate between nodes, rather than telephone wires, etc.

**WPA (Wi-Fi  
Protected Access)**

A network security protocol that uses improved authentication and temporal keys. It was created to address the weaknesses of WEP encryption.

**WPA2  
(or IEEE 802.11i)**

A network security protocol with stronger encryption than WPA. It was created to address the weaknesses of WEP encryption.

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